MEDICO-CHIRURGICAL

NOTES

AND

ILLUSTRATIONS.

PART I.

ON SOME DANGEROUS AFFECTIONS OF THE THROAT, WHICH INDUCE SUDDEN DEATH BY SUFFOCATION.

ON STRICTURES OF THE ŒSOPHAGUS, AND THE DANGERS OF THE BOUGIE.

ON THE CURE OF THE FALLING DOWN OF THE BOWEL IN GROWN PERSONS.

ANOMALIES IN RUPTURE OPERATIONS, &c. &c. &c.

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INTRODUCTION.

THE slight nature of the facts and observations contained in the following Notes, and the desultory, free, and colloquial manner in which they are written, are, perhaps, more suited to the private practical purposes of the case-book, than the public eye;—and that such imperfections should have been presented to it, may require some explanation.

The Author has no other to offer than the truth. During a long period of deep affliction, he sometimes found relief in correcting his notes, and the result is a selection of them for publication,—a trifling measure at the best, never originally intended, and which, in happier days, would either not have been carried into effect at all, or in a manner more becoming his professional appearance before the public.

The present Part of these Notes may contain a few facts and cases in general surgery, sufficient, possibly, to interest the reader. They may also attract his attention to safer means for the relief of the desperate and melancholy condition of a human being starving to death;—and to a closer consideration, and prevention, of some causes of sudden death:——an awful event, never rationally desirable to the most wretched in this life, and often productive of incalculable moral evil, to those who remain to encounter its troubles.

GLOUCESTER, MAY 25, 1831.

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NOTES.

NOTE I.

On the sources of the Spasm of the Glottis.

It may appear strange to write on the origin of an affection which some may believe not to exist, and yet there is a practical value in the facts of those cases which bear upon the question.

When we hear of a sudden death from a simple sore throat, we are struck with alarm, and surprised at the imperfection of art, which admitted such an awful visitation to take place from a cause so apparently insignificant.

But there are some subjects less understood than others, and our surprise at such events must diminish, when we reflect on their rarity. The attention is not often attracted to the subject of suffocation from those affections of the throat, and we therefore know the less of its causes.

But it is a knowledge very necessary to possess; of the highest value; as life hangs upon it; and one too perchance of the most precious character.

Admitting therefore, that life may sometimes be cut short by sudden suffocation from a sore throat, or an abscess, or a wen, it becomes necessary to know in the first place, the exact mode by which that process is effected, before we can have much chance in arresting its fatal progress; and lastly, we must discover the several causes, or particular affections, which will set this process in motion.

Some eminent men have ventured to believe, that the process of suffocation from affections of the throat, is often effected by the spasmodic actions of the muscles of the glottis; and cases are recorded, and others will here follow, in which, evidence enough can be found, to render this a fair, and reasonable conclusion. This evidence consists in the undeniable fact, that in many of those cases of sudden death from suffocation, or an obstructed windpipe, no obstruction of a mechanical kind, either within that tube, or on its outside, can be discovered; whilst on the other, we know that the rima glottidis is surrounded by muscles; and that such muscles are capable of violent, and convulsive actions, upon the application of irritants, which actions are also capable of closing the tube, sufficiently long to extinguish life.

The spasm of the glottis, is probably of the same character as those which affect the urethra, œsophagus, and the rectum; and which are called spasmodic strictures, and like these, that of the glottis is a sympathetic affection, derived from an original disease, more or less distant.

The last object of our enquiry, is a knowledge of those peculiar original affections, which sometimes so fatally controul the actions of the most important and interesting canal of the human body; for when known to us, early and vigorous measures will frequently save the unfortunate patient, from the horrors of sudden death by suffocation.

By discovering the cause, we are more likely to remove the effect. The spasmodic stricture of the glottis, varies in its degree, and duration: the highest degree must quickly prove fatal, no air being able to gain a passage through the rima glottidis, as we sometimes see in the spasmodic stricture of the urethra, which will scarcely allow a drop of urine to pass beyond it; at other times, the degree of spasm is moderate and will last a considerable time, frequently observed in slight convulsive catches of the breath, alternating and connected with more regular difficulty of breathing, produced in some cases by pressure on the larynx, and diseases within that canal.

The spasm of the glottis, is not accompanied by fever, unless this is caused by any of the inflammatory affections which may excite the spasm itself, as cynanche tonsillaris, laryngea, and trachealis, the croup of children, or phlegmonous abscesses on the outside the larynx. From the rarity of the spasm of the glottis, but more especially from its having most fre-

quently but a short-lived existence, medical men do not often have an opportunity of witnessing its wild, peculiar, and distressing character.

The following was written down, soon after leaving the bedside of the patient.

When first seized with spasm of the glottis, the patient starts up suddenly, tossing his arms in wild affright; an expression of terror, as if attacked by some dreadful enemy within, sits upon his countenance; the eyebrows are raised over balls that are starting from their sockets; the shoulders rise and fall, as with an open mouth, and incredible exertions, air is drawn through the nearly obstructed tube, with a singular and alarming sound. Not a word is uttered, enough of the understanding is left in this moment of terror, to induce a belief in the unfortunate patient, that one would be fatal. But as the violence of the spasm subsides, he tells you in monosyllables as well as he can, that he has been nearly choked.

This communication is sometimes made with a voice that causes you to start;—a deep, unnatural growl rises from the throat; or it is a fearful broken whisper, that still bespeaks terror, though now on the decline. As this terror continues to fade, the expression of the whole man assumes a different character. Apprehensive of a return, he seizes the bed clothes with his hands, which before were tossing in the air, that he may not be taken unprepared, and with one or the other, he will occasionally point to the thyroid cartilage, as the seat of all his sufferings. A pale, haggard, and subdued countenance, on which are seen a few drops of cold perspiration, is before you; the mouth half open; the breathing yet hard. The eye-balls indeed have in a measure retired within their sockets, but the eyes themselves, as the understanding rallies, wear a mingled expression of keen, watchful intelligence, which follows your every movement, with restless anxiety. On your countenance and actions, are bent all the powers of the sufferer; a steady gaze meets you every where; if the bearing be calm and determined, there is hope, but if you betray a wavering countenance, and an inclination to reach the door, you will be detected, and your patient, should he recover, will put you down as nobody, or as one of little value in the hour of danger and difficulty.

The following cases, are examples of this spasmodic affection of the glottis, some of which ended fatally, whilst others recovered, upon the removal of the particular irritations which produced it. That those who survived, had the same affection as those who perished, can only be inferred from the fact, that their symptoms were precisely alike. From the fatal cases sufficient evidence is adduced, and quite as much as the nature of the subject will admit of, that suffocation did not take place from obstructions acting within, or from without the windpipe, though occasionally these causes may co-operate with the spasm, and perhaps of themselves be capable of bringing about the fatal event. But practically it is of little consequence how this may be, the object of the cases being to shew, in addition to what is already known on the subject, that so dangerous a spasm does exist, may arise from many irritations, and that we cannot be too diligent in tracing their sources, or decisive in destroying their fatal power.

CASE I.

Fatal Spasm of the Glottis, from an Ulcer in the Œsophagus.

The following note was taken, on the admission of the patient, into the General Hospital at Gloucester.

" Abigail Tarret, aged 18, has complained for some weeks past, of a pricking pain and difficulty in swallowing, and of late she says her breathing is become difficult, especially at times. She has a constant pain in her throat, neck, and side of her head. There is some swelling, with hardness and rigidity of the muscles of the neck, and lymphatic glands. Pulse weak and slow. She can swallow no solids, liquids pass with great difficulty, and in small quantities at a time. She is greatly annoyed by large quantities of mucus in her throat, which she spits out with difficulty. The least movement of her head is intolerable." The treatment need not be particularized. In about a month after her admission, she died suddenly; her breathing having previously become alarmingly serious.

The only morbid appearance to be found on dissection, was a large ulcer in the œsophagus, about an inch below the situation of the cricoid cartilage. The larynx was free from all disease.

CASE II.

Fatal Spasm of the Glottis, from Bronchocele.

—— Takell, aged 14, was admitted into the Gloucester Infirmary, for a bronchocele which had existed for seven years.

Of late, she said her breathing had become considerably affected, especially at times. From the beginning of an examination of the tumor, (during which she complained of its being exquisitely tender to the touch,) her breathing became much affected, and towards its conclusion, it assumed the character of the spasm of the glottis, with which I was not then much acquainted. She said the tumor had been frequently painful, but of late almost constantly so, that at such times it would not bear touching, and that it has recently increased in size.

My note taken at the time says, " she draws in air with uncommon difficulty, whilst handling the tumor, (which is painful to the touch, but not hot) her countenance has a pallid, and anxious expression, she has never menstruated, but her breath is perfectly good. "

" She is to be freely leeched daily till the pain and tenderness be subdued, and then, a small seton is to be passed beneath the skin which is over the situation of the right lobe of the thyroid gland, but it is not to enter the substance of the tumor."

The bite of the leeches, produced the same train of extraordinary symptoms, which followed the manual examination. She sprung up in bed throwing the leeches from her, at the same time raising the shoulders, and tossing her arms about wildly.

In this position with an open mouth, and protruded eye-balls, she drew in air with a laborious exertion, quite astonishing, and a frightened expression and haggardness of feature, painful to look upon.

The leeches were repeated three times, always followed by a repetition of this paroxysm. The nurse spoke of the great tenderness of the tumor, when handled in leeching; but there was no inflammatory redness of the skin, or increased temperature. The seton was passed. From this period there was certainly no amendment; the remainder of her life, was a succession of the struggles to get air, and as swallowing increased their violence, she attempted to take food no more, and died before the preparations for bronchotomy could be completed.

On examination of the tumor, there was found a cyst, which arose from the centre of the right lateral lobe of the thyroid gland, which contained about a small tea cup full of a fluid resembling ink. The lateral lobes themselves were considerably enlarged, but the right the most so.

The larynx was perfectly healthy in its appearance, the membranous covering of the epiglottis, sacculi laryngis, and chordæ vocales, was totally free from inflammation, or its effects.

I shall now give the following cases of spasmodic stricture of the glottis, arising from chronic abscesses in the pharynx.

CASE III.

Spasmodic stricture of the Glottis, from the irritation of a strumous, or chronic abscess of the Pharynx.

—— Hopton, aged nine years, was brought in his father's arms for my advice, on account of the symptoms now to be described.

The poor child with his mouth half open, breathed slowly with a wheezing noise, and in a slightly laborious, though regular manner. He spoke with reluctance, and then in a grave whisper. His father said, he has complained of a pain in the throat, especially in swallowing, and also of pains about the sides and back of his head; but that he would not have brought the child under these circumstances alone, had he not been induced to do so, from an attack of an extraordinary kind, which occurred to the boy in the night. He was suddenly seized with great additional difficulty of breathing, he threw out his arms in a convulsive manner, the eyes stared with a wild fullness, and he laboured to draw in air, in a way as to frighten himself and wife. It was a long, deep inspiration; but he held his breath so long afterwards, that they thought he was dead; yet after a while he would inspire again, but so reluctantly, that it seemed as though he did not like to part with the air, fearful that he should obtain no more.

This mode of breathing happened only when he slept, which he always did in nearly an upright position.

I examined the fauces carefully; there were slight appearances of mucus or lymph, studding them, but no swelling or inflammation of the tonsils, uvula, or in the pharynx: as far as I could see, all these parts had a natural appearance.

As the father stated the spasm to have lasted but a very short time, I contented myself with blistering the front of the neck, and ordering some rhubarb and quinine, as vestiges of stuma were visible in the remains of abscesses in the knee and side of the spine; and finally, that he would keep a person to run to me, should the spasm return.

The boy had a most emaciated appearance. From the generally strumous character, I was led to suspect an ulcer of the larynx.

Jan. 10, "This miserable looking little boy is again before me. He yet breathes with a wheezing and ringing sound, and his voice is hoarse; but there has been no violent attack, or difficulty of breathing since I last saw him.

"His neck in a line with the thyroid cartilage, has considerable fullness and tenderness to the touch, and in turning it round for examination, he complains of great pain, especially in bending it backwards.

"His fauces on a first view still look sound, but in keeping the tongue well down, I think I see a small swelling by the side of the spine, on the back of the pharynx, which leads me to pass my finger deep in the throat.

"The whole of the lower portion of the pharynx, appears as far as I can reach, to be filled by a soft swelling, and I do not hesitate to believe that this is a scrofulous abscess, of the same kind as those which have already occurred on the outside the spine, and leg.

"With a little difficulty a view is obtained, and the abscess opened, which immediately fills the boy's mouth with the thin and imperfect pus, that characterizes the contents of this kind of suppuration."

From this time, and for about a day, his breathing was almost natural.

"March 16. Last night the difficulty of breathing was so great, and spasmodic, as induced his father to bring him to me to day. The abscess deep in the pharynx has re-filled. It is again opened, and a tea cup full of bad pus escapes. The relief to the breathing is complete and instantaneous."

There was no more return of the spasm, but the boy died some weeks after he had escaped its danger, of strumous disease of the lungs. Unfortunately being from home at the time, there was no opportunity of inspecting the pharynx.

CASE IV.

Fatal Spasm of the Glottis, from a chronic abscess of the Pharynx.

A middle aged man, for some time past, had laboured under a great difficulty of breathing, and swallowing, of soreness in his throat, and constant pain there. His respiration was accompanied with a deep hoarse voice, not very unlike the barking of a dog.

On inspecting the fauces, nothing unusual appeared, except that the tonsils seemed to lie remarkably far backwards, and that they were at an unusual distance from each other, making the opening of the pharynx singularly large. This opening was at least two inches across.

One morning his difficulty of breathing increased suddenly to a violent and alarming degree, and in half an hour he died like one suffocated.

On a *post mortem* examination, there was discovered a chronic abscess deep in the pharynx, situated about two inches from the fauces, and containing about two ounces of pus. This abscess very much lessened the size of the canal through which the food was to pass, and also made great pressure on the larynx.

This man was a patient of one of the former surgeons of the General Hospital here. It appears little was done for him, because the affection in his throat was not known or suspected. It is nevertheless true that his life might have been saved, had the surgeon taken the necessary precaution of obtaining as much knowledge with his finger, as it could furnish him. A speculum would have controlled the mouth, so as to have admitted a deliberate examination of the lower position of the pharynx, and a curved pharyngotomos would have penetrated the abscess.

The preparation of which there is an engraving annexed, will shew that the larynx was not closed by the pressure of the abscess, (though its capacity was much diminished) and that it was the spasmodic action of the

glottis excited by the irritation of this pressure, that so suddenly closed life. Were it otherwise indeed, the case would not be of less value. It is however probable, that the current of air was greatly checked by the pressure of the tumor on the larynx, and with this belief it is easy to conceive, that the actions of the muscles of the glottis would more easily close the avenue to the lungs.

The first of the following cases will shew suffocation produced by acute inflammation of the throat, in the form called Cynanche Tonsillaris, by exciting spasmodic stricture of the glottis; and the second is a similar example, in which however the patient was saved by the decisive means employed.

CASE V.

Spasmodic stricture of the glottis, from Cynanche Tonsillaris.

Mr. A——, of Ch——n, in this county, aged about 40, had been accustomed for years to inflammatory sore throats. In April, 1829, he was attacked by this affection, and for which he consulted his usual medical attendant.

He reports that there was general redness and swelling of the fauces, a difficult, and painful deglutition, with the general disturbance of the system called fever.

There was no great difficulty of breathing, though it was noisy; as this process was carried on in a great degree through the nose.

The treatment recommended by my friend Mr. ——— was such as an intelligent practitioner would always direct, but which from some causes unknown to me, were either never carried into effect at all, or very imperfectly. Unfortunately too, the patient lived in the country.

He took some opening and saline medicines, which was the extent of the remedies to which he chose to submit.

For two days he appeared to be doing as well as persons with sore throats usually do, but on the fourth, a sudden and convulsive difficulty of breathing came on, as he was sitting up in bed, and he fell backwards, instantly suffocated before assistance could be obtained. No inspection of the body took place.

CASE VI.

Cynanche Tonsillaris with abscess, exciting spasm of the Glottis.

May, 1829. Mr. S —— of Ashleworth came to Gloucester in great haste, begging me to accompany him to his brother, whom he was fearful would be suffocated before our arrival.

The patient was semi-recumbent on his bed, exhausted by some severe previous suffering, breathing noisily, though evidently through the nose. The history of his case I was now to hear. He had had a sore throat for four days, and had been attended by a medical friend of mine, who lived in the neighbourhood, and by whom he had been bled and blistered; but that he received no relief from these means, and for the last two days he could neither speak nor swallow. But the circumstance which had created so much alarm, as to induce him to send for me, was a sudden attack of violent, convulsive difficulty of breathing, which had threatened strangulation, and which had ceased a short time only before I entered the bed-room.

The fauces of Mr. S. were swollen to an unusual degree, the velum pendulum palati, and the tonsils, appeared to have advanced into the mouth, forming a complete barrier, and closing entirely the communication between the latter and the pharynx, whilst a slight undulating line could be scarcely traced marking the boundaries of the tonsils, as they rested heavily on each other. He was breathing hard, but not spasmodically.

There was a slight bulging of the velum pendulum palati just above the right tonsil, into which I plunged the pharyngotomos, and a torrent of pus was poured upon the floor. Shortening the lancet, the tonsils and velum were scarified freely, and after washing his mouth he spoke freely, and requested food.

I saw Mr. S. no more. He recovered, though slowly, from a state of great exhaustion, spitting up daily, as reported, great quantities of mucus.

CASE VII.

Spasm of the Glottis, from chronic enlargement of the tonsils, on which acute inflammation had supervened.

Beaufort Ward, Infirmary, March 10. As I passed through this ward, the hard, noisy, and troubled breathing through the nose of a girl sleeping, struck my ear as resembling that which is heard when the air passage is encumbered with enlarged tonsils. I have said troubled, for as I approached her bed, she would suddenly spring up asleep from it, uttering a feeble cry of distress as if in fear of choking, and then quietly regain her pillow.

" There is in this young girl's (Martha Hooper's) throat, a chronic enlargement of both tonsils, of an unusually large size; they nearly block up the opening into the pharynx, as was done by acute inflammation in the former case. "

"But here, also, is some active inflammation, which always attacks these enlarged tonsils whenever she takes cold: this is the case at present.

"There is the induration of the chronic, (but there is also great tenderness to the touch,) and the scarlet blush of the acute upon the whole of the fauces. She has pains in her neck, and around the back of her head, which are increased whenever she attempts to swallow.

"She is hot, thirsty, and has a quickened pulse.

"The patients say, that in the night she will suddenly start out of bed, and act and breathe in the most extravagant and alarming manner, her eyes appearing to start from her head, both hands working in the air, as in fighting, and her breathing accompanied by a singular sound.

"She declares that this extraordinary difficulty of breathing never takes place, except under the present circumstances of the throat being inflamed by cold, that it occurs only when she sleeps, though getting up will not always relieve it, for the fit has frequently lasted a full half-hour after she has risen. She is sixteen years old, and has never menstruated."

Just as I had finished my note, my friend and colleague entered the ward where the patient was, and prescribed leeches to the outside of the neck, with some smart purgative medicine.

"March 11. The nurse says, that in the night the girl has had several attacks of great difficulty of breathing, which, however, subsided on her rising in bed.

"This morning, since the action of the means employed, she is unquestionably better. The redness of the fauces, and the tenderness of the tonsils, the pain about the head and neck, are all gone, and the tonsils are greatly diminished in size."

The active inflammation being thus removed, with the additional bulk of tonsil, their combined irritation no longer excited the dangerous action of the muscles of the larynx. Henceforward her nights were no longer disturbed by suffocating starts, nor the neighbouring patients terrified by witnessing so novel and alarming a scene.

CASE VIII.

Suffocation from a Venereal Ulcer in the Throat, exciting the Glottis.

—— Joy, appeared at the Public Surgery, requesting advice, as he said, for a sore throat. His voice was an unnatural deep growl, and he spoke of a great difficulty in swallowing, and sometimes of breathing, especially when he lay in bed. His breathing was of that kind as though he spoke with uneasiness and reluctance, and every now and then a word was not articulated, or but indistinctly. His breath was exceedingly offensive.

There was no visible disease in his throat, though he remarked that he frequently expectorated, after much exertion, thick matter sometimes mixed with blood.

On enquiry, I found that he had had sores on his penis, and buboes, within the last few months, which healed, whilst the mouth was sore from mercury. A bubo had closed recently; there was still an ulcer on his head. I explained to him that I considered his case one of great danger, of suffocation from an ulcer he had deep in his throat, which could not be seen, that he might have occasion to undergo an operation to prevent the fatal event, and that, therefore, he had better obtain a letter of recommendation to the Infirmary.

He walked about the City with his mother, that day, in search of a recommendation, and down to the Hospital with it, and went to bed there at the usual hour, breathing no worse than usual.

In the night the House Surgeon was called to this man, who was said to be suffocating. This was the fact; he died immediately after swallowing, with great difficulty, an opiate, given to him for the purpose of allaying the extraordinary spasmodic breathing, with which he had been suddenly seized. It is not improbable, that the attempt to swallow this draught hastened his fate, by irritating afresh the already excited glottis. A large sloughy ulcer occupied the lower portion of the back of the pharynx, and had extended itself to the back of the larynx, but the rima glottidis was free from disease, and its channel of the natural size.

CASE IX.

Violent spasm of the Glottis, from phlegmonous inflammation of the Neck. Patient saved.

I was requested to drive with speed to a gentleman, who was said to be suffocating. I had scarcely entered the house, when it was reported, that the violence of the attack had somewhat subsided, though the patient was still gasping for breath.

He was sitting nearly upright on the bed, and on my name being announced, he fixed his gaze anxiously upon me, as if to enquire what relief he might expect, from a close scrutiny of my bearing and personal appearance. The expression of the countenance had also the wild horror of one who had just escaped some frightful personal danger, and who was yet momentarily expecting again to be overtaken by it.

The Spasm of the Glottis was here plainly to be seen, in the occasional convulsive catches of his breath, though its violence had in a measure passed away.

He grasped, as he sat, the bed-clothes with both hands, and his mouth was open, drawing in air with great difficulty, his shoulders rising and falling as he did so, the eye-brows raised, the balls starting forwards, and a cold dew upon his pale face. As I approached the side of the bed, he let

go the clothes with his right hand, and pointing to the front of the larynx, said in a hoarse and husky whisper, "I shall be choked."

This gentleman had been subject to sore throats, indeed he had lately had one, the effect of cold on a night exposure.

At present there was no vestige of any inflammation about the interior of the throat, though he now swallowed with difficulty: but on the exterior there was a general swelling across its middle, more especially on the left side, a little below the inferior cornu of the thyroid cartilage, deep and immediately over the carotid. The swelling had ascended high in the neck, making it look generally of a colossal size. At the point near the thyroid cartilage there was a redness, tenderness to the touch, and pain, marking the presence of phlegmonous inflammation.

The pulse was quick; he was hot and thirsty. Fifty leeches were applied to the inflamed parts, and a strong purgative given.

Three hours afterwards I visited this patient. The bleeding had been profuse, and his respiration was infinitely more calm; though once, and for a minute, since my last visit, he struggled so much for air, that his attendants thought he would have gone. This character, indeed, had prevailed throughout; respiration always difficult, but at times the convulsive struggle and stricture about the larynx, frightful.

I watched the mode of breathing for nearly half an hour; and being satisfied that the regular difficulty, mingled now and then with spasm was greatly diminished, and that I saw no violent spasm of the glottis, I left, with instructions to be sent for, should the respiration become worse.

I heard no more of the progress of this patient, till I visited him eight hours afterwards. The breathing was nearly natural, the swelling in front of the throat greatly reduced, and the skin become pale. There appeared, however, a little hollowness of the point, which was red, near the inferior cornu of the thyroid cartilage.

The spasm of the glottis did not return: but a day or two afterwards, I understood that the patient brought up some offensive matter, making it probable that suppuration in the cellular membrane of the neck had taken place, and found its way into the pharynx.

CASE X.

Spasmodic stricture of the Glottis, from a small irritable Bronchocele.

Elizabeth Cooke, of Corse, had a swelling on the left lobe of the thyroid gland, not bigger than a small walnut, which might be called bronchocele, or a tumor of this gland. She said it was painful when handled, but at ordinary times not so, except when she took cold, or was otherwise unwell, and then the tumor would increase in bulk, become regularly painful, and exquisitely tender to the touch. At such times too, she said, her breathing became strangely and unusually affected, so as to threaten suffocation, the fear of which brought her to my house for advice. Upon handling this swelling pretty freely, she put away my hand instantly, breathed convulsively, drawing air very distinctly and noisily, through a narrowed glottis.

The occasionally increased size of the tumor from cold, which raised the temperature, and increased its sensibility, induced me to order a bleeding from the arm; but it appeared that attention to the stomach and bowels, and the employment of tonics, especially the subcarbonate of iron, in doses of two drachms twice a day, was of the most service, in diminishing the extraordinary irritability of this tumor.

CASE XI.

Spasmodic stricture of the Glottis from Laryngitis.

A medical friend of mine, about fifty years of age, sent for me in the night, with a message that he feared he should be suffocated. I found him sitting up in bed, an expression of alarm on his countenance, and breathing with great difficulty, though regularly, that is, without those sudden exacerbations which indicate spasm of the muscles of the larynx. He however said, that before my arrival he had a more than common difficulty of breathing, that terrified him exceedingly, and so fearful was he of its return, that he would not permit his daughter to leave his bedside, where she was stationed to prevent his going to sleep, the fit, as he called it, having taken place during that period. His pulse was quick, and full;

there was thirst, with some cough, and he brought up, occasionally, a quantity of mucus. He had been a good deal exposed of late to the night air, in his practice of an accoucheur, had been ill about two days with soreness of the throat in swallowing, and some difficulty of breathing, and fever, but nothing in degree to what he now suffered. He referred all his distress to the larynx, where he placed his finger; he complained of pain there, but especially of a sensation like the drawing of a purse-string, to close the channel of the purse: "but," said he, characteristically, in a croaking, broken voice, "I suppose the string is not yet drawn very tight, when it is, I shall be no more."

As the fauces indicated no inflammation, and but very little redness, and that only visible when the tongue was well kept down on the lower part of the back of the pharynx, and as the boundaries of the neck were free of all irritations which might affect the glottis sympathetically, and as the patient had taken cold, had cough, and symptoms of fever, together with a regular difficulty of breathing, independant of all spasms, and also expectoration of mucus, I ventured to believe, (more especially as he complained of regular pain under the thyroid cartilage,) that this was a case of inflammation of the mucous lining of the larynx, and perhaps of the lower portions of the pharynx, which excited the spasmodic action of the muscles.

He was bled largely from the arm, and forty leeches were applied as nearly as possible about the thyroid cartilage, to the spot where he complained of pain.

Under these active means the symptoms gradually faded. He retained his daughter however for a long time to prevent his sleeping, a painful and self-denying resolution for an exhausted man, only to be accounted for, from the deep impression made on his memory by the suffocating nature of the spasm, which seized him during sleep.

To this day the impression of terror is as fresh as ever in this gentleman's memory; the fear of taking cold, and of a return of the attack is constant, and in consequence I believe he retired from his business as an eminent accoucheur.

CASE XII.

Spasm of the Glottis, from Phlegmonous inflammation on the external part of the neck.

Elizabeth Ward, of Beaufort Ward, Gloucester Infirmary, a very fine young woman, was seized with a severe pain deep in the left side of the neck, about mid-way between the angle of the jaw and the sternal extremity of the clavicle. The spot was exquisitely tender to the touch: there was a slight swelling, and the cicatrix of an abscess which formerly occupied the same point.

She had not long endured the severity of the pain before her breathing became very difficult, in fits, with a whiffling or wheezing sound, and her voice was scarcely audible. Five dozen of leeches in two days to the throat, with general bleeding, and blistering, certainly relieved her, but not decidedly. On the third day she still breathed badly, though better; before the leeches were applied the fits of difficulty of breathing were more violent, it was now a more regular, though subdued, and moderate action.

She swallowed with pain and difficulty. On the fifth day from the date of the attack, she says she heard something give way in her throat, and that afterwards she breathed, spoke, and swallowed better. From this time these symptoms vanished, though the inflammatory attack in the neck which preceded them, occupied in succession other parts of the body afterwards, as the chest, hips, and shoulder joints; in the knee it required the most severe and active treatment, to prevent suppuration.

Additional Cases from enlarged Tonsils.

CASE XIII.

Garret Ward. Anne Golding has both tonsils enlarged, so as nearly to shut out from view the channel of the pharynx. The patients say, that frequently in the night, she jumps wildly from her bed, tossing her arms, breathing with a loud noise, and with great difficulty.

In a very short time she will lie down again and go to sleep; indeed, sometimes she appears not to be awoke by the extraordinary movement she performs, but totally unconscious of it. At all events she soon awakes again to repeat the same actions.

CASE XIV.

Garret Ward. Hannah Portlock has similar chronic enlargement of the tonsils, and the same train of symptoms which indicate the spasm of the glottis take place in the night, which is attested by all the patients in the neighbourhood of her bed. They are both intended for operation.

CASE XV.

Spasm of the Glottis, from the irritation of an elongated Uvula.

A steward of Colonel Berkeley's complained to me of a very odd attack he sometimes experienced in the night, and to which he had been accustomed for some years. "It don't last long," he said, "for if it did I should be suffocated, but it alarms me exceedingly." In truth, he then spontaneously described the spasm of the glottis so accurately, that it was clear he was the subject of it. From the attack occurring in the night during sleep, which impelled him to rise suddenly to seek relief, and that this relief always followed this change in his position, exactly after the manner of the spasm of the glottis produced by the irritation of an enlarged tonsil, I was induced to take a careful survey of the fauces. There was no enlargement of the tonsils; but there was an uvula so remarkably elongated that it instantly arrested my attention. Its point was so long as to lie horizontally upon the tongue, and the whole of the fauces had a chronic, deep red, and relaxed appearance. Mr, L. in illustration of the condition of the uvula, said, that he had almost a constant feel, as if something stuck in his throat which he could not get down. On further enquiry, he had the more ordinary symptoms of indigestion, as flatulence, and irregularity of bowels.

As this gentleman was sleeping upon his back, the great length of the uvula fell backwards, sweeping and irritating the epiglottis, and thus exciting the muscles which surround the glottis, to their spasmodic action.

I wished to amputate the extremity of the uvula, to which the patient would not consent. He was then subjected to a tonic stomach treatment, and the use of powerful astringents to the fauces.

OBSERVATIONS.

It will be seen in the foregoing cases that the stricture of the glottis, the effects of irregular actions of its muscles, and which terminated in many of them in instant death, was produced by this interesting and important canal, sympathizing with the following distinct affections, more or less distant from itself.

1. From the irritation of acute inflammation of the mucous membrane of the fauces where it covers the tonsils, velum pendulum palati, and tonsils, (cynanche tonsillaris.)

2. The irritation of the rare, acute inflammation of the mucous membrane of the larynx, (laryngitis) and lower down the trachea, (cynanche trachealis,) or croup of children. I never saw but one example of the spasm from this last cause, and of this no note was taken. The child was suffocated before bronchotomy could be performed.

3. The irritation of an irritable bronchocele.

4. From the irritation of an ulcer in the œsophagus.

5. The mere handling and leeching an irritable bronchocele.

6. The irritation of a scrophulous abscess of the pharynx.

7. The irritation of a phlegmonous abscess of the neck.

8. Irritation of a chronic abscess of the pharynx.

9. Of acute phlegmonous abscess of the fauces.

10. Chronic enlargement of the tonsils, when inflamed and increased in size by taking cold, as in sore throats.

11. Venereal ulcer of the throat.

12. Elongation of the uvula.

It is probable that the degree and duration of the spasm of the glottis, in many instances depend upon the quality of the primary irritation, and the seat of its application, more especially extraordinary sensibility of surface, which itself may be influenced by the condition of the stomach. Thus some substances taken into this organ at one period will produce head-ache, whilst at others they will not.

These phenomena are doubtless the effect of certain modifications of the nervous influence, the variety of which are as endless as the task of seeking out their explanation. The terms, irritability, morbid sensibility, &c. merely express the fact. In Takell, the bronchocele bore no marks of inflammation, yet it was exquisitely sensitive to the touch, producing spasm, but in a less degree than the leeches; the effects of the seton exceeded both.

The treatment of the spasmodic stricture of the glottis consists in the speedy removal of its cause. If this is not done with decision and rapidity bronchotomy becomes necessary.

In general the period of its duration is short, but should there be a regular difficulty of breathing independent of it, as from pressure on the larynx, or trachea, or from these canals being diminished, either by change of structure, or lymph occupying them, the danger of suffocation from the violent spasm is greatly increased. Where there is pressure, the surgeon should be on the alert, for this may both be the cause of the spasm itself, and increase its danger.

In the example of the Hospital patient of whose disease is an annexed sketch, this was probably the case. (See Plate.) The pressure mechanically obstructed the air passage in some measure, but the spasm finally closed it in so rapid a manner as to leave no doubt of its operation.

This case also will serve to shew that the surgeon ought not to be satisfied with a visual examination, where the causes of great difficulty of breathing in affections of the throat remain undiscovered. The fauces may appear sound, and yet in the depth of the pharynx may be concealed the true cause of the mischief.

The most minute and careful survey should be made with the hand and eye of the interior and exterior parts of the throat, in all cases where the source of the spasm is doubtful.

The pharynx in an adult is about two inches and a half long, as measured from the plane of the tongue, to the commencement of the œsophagus; and nearly the whole of this portion of it may be explored with the finger, if the jaws are well fixed asunder by a proper speculum. The fore finger of the right hand introduced between the molares, as far back as the corner of the mouth (on its right side) will admit of, may command the whole cavity.

The examination should be done quickly and decisively, or otherwise the irritation of the finger will excite a renewal of these very spasms, or increase that difficulty of breathing, the cause of which it is meant to discover.

In acute inflammation of some portion of the mucous lining of the wind-pipe, (laryngitis, or cynanche trachealis,) where the cause of this spasm is the most hidden from view, it happens fortunately that its history and rapid course sufficiently indicate the disease, the catarrhal symptoms, from exposure to cold, cough and fever, difficulty of swallowing, seat of pain and stricture, distinguish it in the beginning from other causes that may operate to produce in the interior of the throat great difficulty of breathing.

The treatment of the foregoing case should, in the commencement, be vigorous in the extreme, for soon will the rima glottidis or trachea be choaked with lymph, or its lining membrane be thickened so as to furnish a mechanical obstruction to the passage of the air, which must greatly add to the danger of suffocation from a supervening violent spasm.

Of the fatal case of bronchocele, whose irritability destroyed the patient, it may be inferred that there was no inflammation about the tumor, from the want of increased temperature, the quiet health of the constitution, and the total failure of anti-inflammatory remedies to relieve it. This extraordinary irritability, was, as already hinted, probably neuralgic, like unto that condition of the nerves of the face in tic-douleureux, which suffer a paroxysm of pain, from the mere act of eating, emotions of the mind, or morbid sensibility of the nerves of the stomach, excited by improper food. This kind of irritability is more relieved by attention to the state of the stomach and bowels, and by tonics in large doses, than by remedies calculated to remove inflammation, as in the second case of irritable bronchocele already recorded.

The difficulty is in distinguishing irritable organs from inflamed ones. They are both often tender to the touch, and painful. But the former almost invariably occur in persons who possess a low degree of vigour, as in struma, or in those in whom the nervous system has been disturbed by some of the forms of the affection called dyspepsia. If there be however an increased temperature, with tenderness to the touch, pain, and fever, there may be inflammation superadded, and bleeding becomes necessary, even to an irritable part; although in the case of irritable bronchocele, or

tumors that go under that appellation, the bleeding should be general, from a fear of rousing the fitful activity of the laryngeal muscles.

Should the spasmodic stricture of the glottis be excited by acute inflammation of the fauces, whether advanced to suppuration or not, as in the cases of Surman, the Hospital patient, Martha Hooper, and Mr. A——, the most active, local, and general means should be employed in the first instance; whilst in the last, a fair and broad opening in the abscess, will be sufficient to do away the irritation and the danger.

Very powerful general means, and scarifying the inflamed part freely, will very frequently prevent suppuration, and surely such should be accomplished, in all cases of extensive inflammation of the mucous lining of the fauces; for if we allow a large abscess of the tonsils to form, the passage for the air through the pharynx, will be more or less obstructed mechanically, and vastly add to the danger of suffocation, should a spasm in addition take place.

If however an abscess forms about the tonsil, notwithstanding the local treatment of scarification, or leeches to the outside of the throat, accompanied by a rising difficulty of breathing, no time should be lost, the patient's jaws should be well separated with a speculum, the tongue depressed, and an accurate examination be made of the fauces with the eye and finger.

The abscess generally points, or rather slightly bulges through the velum, on the side inclining to that on which the tonsil is most affected.

With the mouth fixed by a speculum, the fingers will usually be able to distinguish a fluctuation, and although it may be somewhat obscure, yet the surgeon should be satisfied of the fact. Unless pains like these are taken, the pharyngotomus will be at work at random; several plunges may be made unsuccessfully with it, there being generally no such distinct pointing to lead the eye as in abscesses in a different structure.

Surgeons have again and again punctured the tonsil, and retired from the patient with a belief that suppuration had not taken place, leaving him to an imminent risk of suffocation, the abscess remaining altogether untouched, and hourly rising in magnitude and danger. The examination had not been sufficiently minute to detect its real position. An abscess of the tonsil will sometimes take place on the back part, skirting it in a long

and somewhat indistinct form, in the manner of the lip-like character of the gum abscess, as seen between the cheek and the jaw.

The best instrument for opening the abscess of the tonsil is a broad lancet concealed in a sheath, called the pharyngotomus. With the aid of a speculum, which furnishes a good view, and a steady hand, it may be used effectively and safely; but there is mischief to be apprehended from carelessness, as well as from gross ignorance, even in this very simple operation; it would be the former, were a surgeon to point his instrument towards the angle of the jaw, and plunge it deep into the carotid, because he would not be at the trouble of gaining a good view: it would be something else, of an infinitely worse character, should he do this in ignorance of the situation of that vessel. And yet it has been struck more than *once* or *twice*, and the unfortunate patient sent to his account without warning by the very hand that should have saved him. Of course the pharyngotomus should be held in a straight line from one of the lateral incisors opposite the abscess, to the back of the pharynx, and striking the abscess only when the operator is certain that the mouth of the canula is resting fairly upon the spot he wishes to tap.

Should the abscess be deep in the pharynx, as in the case of Hopton and the hospital patient, a curved instrument must be used, the fore-finger of the operator leading the point of the canula to the abscess, as far towards the back of the pharynx by the spine as possible, thus acting behind the larynx. The prominence of the tumor will assist.

The chronic enlargement of the tonsil, (of which I have seen fourteen examples within the last year, in girls only,) will frequently, by obstructing the air through the pharynx, affect respiration; and supposing that the enlargement should not be enormous, an attack of inflammation will not generally increase the difficulty by increasing the size of these glands, but then there is the irritation of the inflammation and suppuration to be dreaded, and should the glands in their chronic state be of great bulk, inflammation superadded will further increase it, and suffocation might take place from a few minutes assault of this terrific spasm of the glottis.

It will be right, therefore, where acute inflammation seizes the enlarged tonsils, to subdue it by the most vigorous means, as speedily as possible.

It was pleasing in the hospital patient, Hooper, to witness the departure of this spasm, as the treatment reached and dissipated the inflammation which produced it. The occurrence of the spasm during the season of sleep, in these cases of enlarged tonsils, is probably referrible to the position of the patient, to the languor and relaxation on that state of thorough abstraction from worldly trouble: thus the tonsils fall cumbrously backward, and encroach upon the pharynx. The attack of spasm, however, does not always subside on the erect position being regained, a proof that the dangerous action of these muscles cannot always be instantly allayed, when once excited. Nor is the supervention of violent spasm during sleep only produced by the falling back of enlarged tonsils, for it is seen to occur in many cases of laryngitis where the tonsils were not affected; and in Mr. C. (see Case XI.) this was strikingly the fact.

When the tonsil becomes so large as seriously to interfere with the process of respiration and swallowing, and no local or general treatment is found capable of effecting its reduction to an innocent size, it becomes necessary to remove a large portion of it, for it does not appear that it is absolutely required to remove the whole gland; and from what I have seen, this cannot be done without risking more bleeding than is desirable in so narrow and remote a spot. Hence it is, that when the mode of removal by excision is adopted, some surgeons are content with a section of it, having a natural repugnance to cut deep in the dark, confined cavity of the fauces, so far from the aid of the fingers. Patients too, frequently dislike the knife, and I will shortly describe how I have been in the habit of using the ligature with perfect success.

Cheselden used to pass a curved needle, armed with a double ligature, through the base of the enlarged tonsil, by which the part was divided into two portions. The threads were then separated, and the two belonging to the upper portion were passed through a canula, (Levret,) which was carried close to the tumor, and retained there by twisting the ligatures around its bars. The other half was then treated in the same manner, and the threads on each tightened daily. This is a difficult operation to perform, especially where the jaws are not fixed by a dilator, and Mr. Chevalier somewhat improved it, in making a hole through the tonsil by means of a broad curved needle fixed in a long handle, and through that the double ligature was passed, appended to a bent probe, in the original manner of

Cheselden. But even this method is sufficiently difficult and tedious. The orifice of the hole through the gland cannot always be easily discovered by the head of the probe, and then you have to tighten each thread separately. The mode I have adopted is one which renders all inconvenience to the operator from the irritability of the fauces impossible.

This is done by first separating the jaws of the patient by means of a dilator, so that when the fauces are teazed by the fingers of the surgeon, the first shall not be bitten, nor the latter interrupted in his operation by the patient shutting the mouth.

Before the dilator is fixed, a packer's noose, made of small whip-cord should be prepared. This is effected by making a single knot upon one end of the thread; this end, with the knot, is to be brought forward upon the other, so as to make a single noose upon itself, including the other, and to be drawn tight upon it close to the first knot. The free end of the thread is then to be passed through the ring of the simple instrument used by Mr. Chevalier, to tighten the knot. See his plate, 3rd Vol. Med. and Chir. Transactions. So far, I go with Mr. Chevalier.

The dilator is now fixed; the jaws are well open. The assistant seizes the tonsil with a double hook, on which hangs the noose. This last, with the ring appended to it, is held by the surgeon himself. Now the assistant must pull the tonsil from its loose bed in a diagonal direction across the mouth; its base becomes elongated, the noose is slipped over it, and carried by the fingers of the surgeon close around it: the ring is then run up to the gland, and the ligature tightened, which is repeated daily till the tonsil drops off, which it does in a few days.

It may be supposed that this simple mode of noosing a tonsil could not be carried into effect where the base of the gland is very wide. But it is surprising how forcibly pulling out this part from its bed, will contract the base of it by elongation. Now and then it may so happen that the base would be too broad for the noose; I can only say, however, that I have never yet met with a tonsil with a base that would not yield to elongation, and, therefore, that could not be noosed in the way described.

If the surgeon be bold, and dexterous with his fingers, the whole operation is done with a rapidity and effect very different to the long and worrying mode pointed out by Cheselden, or the ingenious improvement of Mr. Chevalier.

NOTE II.

On Strictures of the Œsophagus, and the dangers of the Bougie.

Were the irregularities and difficulties encountered in Practice constantly and honestly narrated, (as recommended hereafter in the case of failures,) by practitioners, the progress of improvement in our profession would be more rapid, and the power of preserving life, and abridging many forms of human suffering greatly increased.

Of all these forms, there is not one in the whole range, in the entire catalogue of human woes and wretchedness equal, at least in contemplation, to the effects of stricture of the œsophagus; for the strongest mind must recoil and shudder at the probability of being starved to death. "Wilt thou not, father, give me food," said the dying son of Ugolino, who had none for himself, and therefore none for his child.

But with food in his hand, the patient afflicted with this terrible malady finds that he cannot swallow a morsel, or it sticks by the way, and soon returns with an ominous foreboding. The road to his stomach, that organ without which life cannot be sustained, he feels to be blocked up! In vain is the rich man surrounded with luxuries, or the humble fare of the poor offered by the hand of affection; it is all of no use, they are now indeed upon terms of equality, and must both alike perish of starvation, should surgery be unable to afford them relief.

To attempt this, however, is a difficult and a dangerous process, hitherto attended with little success, and frequently productive of fatal consequences to the patient. I have said frequently, perhaps without being justified in so doing, inasmuch as the real stricture of the œsophagus, of which only we are speaking, is itself but a rare disease, and, therefore, destruction of life, in attempts to cure it, must also occur very rarely. But

to speak with more precision, I believe that false passages from the œsophagus are made in one half the cases treated, and should this be true, whether abbreviation of life is not the consequence must be left to the consideration of the reader. To improve the treatment, by diminishing its danger, is the object of the present note, which proposes a new instrument to the profession, designed by the author, and executed with the usual ability of Mr. Weiss.

But before describing the dilator for the œsophagus, it may be proper to consider, briefly, the character of this particular and important obstruction of the passage of the food to the stomach.

There are generally two kinds (it is not meant here to consider spasmodic affections of this tube) of the true, or firm stricture of the gullet. The first appears to be a contraction or puckering of the inner lining, very like what occurs so frequently in the mucous membrane of the urethra. There appears but little thickening in its neighbourhood, the contraction is formed of a mere transverse fold of the membrane itself at a particular point, leaving an aperture in the gullet, sometimes in the centre of its canal, and often close by the side of it, and the remainder of the tube blocked up. This may be called, therefore, the membranous stricture, but though of a slighter texture than another form of real stricture of this part, yet is it capable of resisting a bougie, and turning its point in a wrong direction, especially if the fold of the membrane constituting the stricture be thrown diagonally across the canal of the œsophagus; for in this case the point of the already bent instrument will slide over the edge of the fold, and rest against the side of the tube itself. A little more force than usual now applied, and it passes quite through the substance of the œsophagus.

The other form of firm stricture to which the gullet is liable, is a dense, cartilaginous thickening of its coats, which assumes a tumor-like character in the side of it, surrounding the canal more or less, according to the extent of the disease. It may be what it has been called, a schirrous stricture; but I have never seen the membranous septa intermingled with this substance when a section has been made through it, nor has it during life the symptoms of schirrus: neither have I seen this cartilaginous stricture conjoined with ulceration in the substance of the œsophagus, as

authors have described under probably the just term of schirrous ulceration of the gullet. At all events, whatever may be its character, it is the business of a surgeon to make his way beyond it, that a road to the stomach be opened for the passage of food, ; for be the result what it might, it would be cruelty to leave a poor wretch with his throat shut up, when it is in our power to open it.

The cartilaginous is a very rare form of stricture compared with the membranous one, and the last itself is not an every day occurrence in our hospitals.

Deep in the throat, and remote from the eye and the hand, these affections require, for safe practice, the most delicate tact, caution, and experience in the employment of instruments, which only are capable of giving relief.

If they are used roughly and heedlessly, mischief must ensue; and even in more careful hands, unused to this portion of the surgery of the throat, the most lamentable effects will sometimes follow, as will presently be shown.

Nothing can be more common in hospitals, than to see the pupils passing bougies down the throats of patients who are reported to have strictures of the œsophagus. The instrument will pass easily, and the physician or surgeon takes credit for the discovery and cure of a disease that never existed. These are spasmodic affections of the tube, which sympathise with a disordered stomach; they yield to a slight pressure of a bougie, and do not at all resemble the stubborn, permanent obstruction, which comparatively is seldom occurring.

The first of the following cases is an example of the stricture beginning in the inner lining of the œsophagus, which assumed a bridle-like form across that tube, in such a way as to leave an opening to the left of it, through which a bougie would pass. But sometimes its point would hitch behind this bridle when the stricture did not admit it, and by daily attempts in this direction, ulceration was doubtlessly effected here; a little more force than usual was then merely required to force the instrument through the front of the tube into the wind-pipe. *See the annexed sketch.*

CASE I.

Membranous Stricture. Death from a false passage made by the Bougie.

A maiden lady, aged sixty, who for nearly thirty years had been afflicted with severe forms of dyspepsia, and who had taken opening medicine almost daily for the whole of that period, now began to complain to her medical attendant of uneasiness about her throat, and across the lower part of the neck, with painful and difficult deglutition. Soon afterwards I was consulted, and upon expressing an opinion that there might be a stricture of the œsophagus, she sat down to allow me an examination.

With some difficulty I got through a stricture beyond the cricoid cartilage, with a small-sized black instrument, but not until I had turned its point considerably to the left; it then appeared to grate over a rough surface.

She remained in Gloucester a few days, during which time I passed the same instrument twice, after which she swallowed better, and returned to her home in the country, with a supply of bougies, to be now used by her family surgeon, a cautious and most respectable practitioner.

I heard no more of this patient for a fortnight, when her surgeon wrote thus;—"I sometimes can pass the instrument, and sometimes cannot; a little blood is occasionally spit up, and the glands on each side of the neck swell. She does not swallow so well."

Soon after this another opportunity of examination was allowed me. She complained of increased pain across the root of the neck, and a tight feeling as if a cord was drawn around it. Suppuration was advancing in front of two lymphatic glands, one on each side the neck. I could pass a bougie of only half the size of the one I used before, but not without difficulty. She did not appear to swallow worse than when I last saw her; but there was, she said, a variation in this respect; at times she could swallow much better than at others. I recommended the anticipated sores from the bursting of the abscesses to be made into issues, and that the bougie be passed cautiously three times a week, and to increase the size gradually if possible.

It was a month afterwards before I again heard of this lady; her

medical attendant reported thus;—"she is much reduced, and complains of being unable to swallow any solid food; liquids only will pass. I have now and then been able to pass the same sized bougie, but invariably after I have succeeded she complains of a pain between her shoulders, in the throat, and about the sternum. I observe that she sometimes expectorates matter with an offensive smell." I was requested to see her. The abscesses had burst, but were not yet made into issues. The glands behind them were hard, and appeared to strike deep into the throat. On examination with the bougie I discovered more room at the point of the stricture than could be expected under the circumstances, and enough, I should have supposed, to allow of the passage of considerable morsels of solid food. The point of the instrument gave considerable pain at the situation of the increased opening, which reminded me of the pain suffered when an urethra bougie has made a new passage from that canal. She attempted to swallow, and it appeared that some small solid morsels passed, but milk returned. Invariably, however, this act of swallowing induced coughing, and great quantities of mucus were brought up by the mingled act of retching with coughing. She said, feebly, "I think it went down, but it comes up again with this nasty stuff." She now too was worried by considerable difficulty of breathing, and I took my leave of her, I was sure, for the last time in life. The print will best illustrate the dissection. The stricture itself was nearly impervious, and was formed by a diagonal fold of the inner membrane across the canal of the œsophagus. There was, however, no diseased appearance near this new arrangement of the inner membrane forming the obstruction: but a considerable opening made by the bougie was evident, connecting the œsophagus and wind-pipe. The mucous membrane of the latter was greatly and extensively inflamed, and its channel filled with mucus, among which was one or two very small substances, looking like pieces of food of some sort, that had been forced in this direction through the opening or false passage. There were no other diseased appearances likely to shorten life.

Whilst the foregoing case is an example of the extreme danger of the pointed bougie used in the ordinary manner, the following case will illustrate some points of interest in the firm cartilaginous stricture, the inadequacy of pointed or spherical instruments in such cases, and how far it is

probable that the patient might be nourished through tubes, until the stricture is destroyed by laceration by the side of a proper instrument.

CASE II.

Firm, Cartilaginous Stricture.

Mr. W——. a person about sixty years of age, of intemperate habits, (a spirit drinker,) first felt some difficulty in swallowing his food, about eight months before his application to me. About this time a great portion of it was rejected, and he had a hoarse, husky voice. This patient was otherwise in good health. He thought his complaint to be a sore throat, to which affection he had been accustomed; when he was informed of the probable nature of his malady, and the necessity of an examination with a bougie, he became alarmed, went away, and I saw no more of him for a month.

At this time his swallowing had become more difficult than ever. I passed a bougie about the size of my little finger with such difficulty through a stricture, as to give an impression of its being firm and resisting to an unusual degree. I continued the use of the instrument two or three times a week, sometimes passing it, and at other times I could not do so, which I attributed to the supervention of spasm on the part, as an event likely to happen in a patient like this, who possessed a remarkably irritable mind. I found, however, the difficulty increase, the point of the instrument presently turned back by the stoutness of the stricture, and I was reluctantly compelled to use a smaller one, which, like the former, I sometimes could pass, and at other times I was not able to do so, from the stricture bending it back. He could now swallow nothing but liquids, for although the bougie fairly reached the stomach, still it was plain that the powers of deglutition were not sufficient to impel food through the small aperture of the stricture, and soon, even of liquids he could only swallow at different times in the day a glass or two of port wine.

He was thus (notwithstanding frequent strong broth enemas,) sinking fast into the grave, and scarcely able to sit, when I used the armed bougie

several times without success. Indeed, after the last time, he could swallow nothing, and it was discontinued at his own request.

In vain was an elastic hollow tube attempted, or the ivory balls with whalebone handles; all were turned back by the stricture.

The weak whalebone one bent against it; and to use another sufficiently strong to overcome the obstruction, or rather to have a mere chance of doing it, would have injured the back of the pharynx, against which it must have rested heavily to be bent, the spring of the material always tending to act partially and with great force, on every point down the track of the œsophagus, on the posterior surface of that tube.

I now curved as a last resource, a large hollow urethra metallic bougie, to the shape of the fauces, and having first taken an accurate measure of the distance of the stricture from the teeth, and marked it upon this new instrument; I attempted and did succeed in passing the obstruction. With the side of the instrument (it was certain no harm could be so done,) I rather freely acted right and left, to make more room. This was obtained; he swallowed almost immediately.

For a week afterwards he got down some ounces of meat in a day, and drank his ale freely. In truth, flesh and strength were gained. But he became too sanguine, and therefore careless, went out and caught cold. I had passed the instrument every other day, without there being occasion for any further lateral motions of it, and all was doing well, when on this day, the eighth from the dilatation, the bougie would not pass; the patient was feverish, his throat was sore and the fauces swollen. Now the larynx sympathised with the inflamed fauces, and he breathed laboriously. In his weakened state it was painful to be obliged to bleed him, and yet I felt justified in leeching the outside of the neck I could not willingly venture to pass the instrument to make room whilst the glottis threatened a spasm, which, in his reduced condition, would have proved instantly fatal: and thus he became suddenly weak, and it was evident he must perish soon, if something were not done. I however again attempted and succeeded in introducing the tube, and, as it occurred to me in the instant, I fed him through it with egg wine, first with an ear syringe, and afterwards with Weiss's pump. But it was too late; his courage, though of the finest order, was useless; his eye glimmered with joy at the prospect of being

thus easily fed; he rose and staggered with convulsive energy, and without assistance, to the bed-post, on which he held with both hands, and waited, with an eager and open mouth, for the meals that were to save him. They did not save him. He became sick in the night, and died in the act of vomiting; probably through the intervention of a spasm of the glottis, excited by the pressure of the regurgitated food at the bottom of the pharynx.

Sectio Cadaveris. He was generally free from diseased appearances, except about the gullet.

The stricture would be considered by many (and perhaps it was) an example of schirrus affecting this part, but there was no other evidence in proof of this, than that a section through it discovered a hard, whitish, cartilaginous thickening, occupying a considerable portion of the circle of the œsophagus. (See Plate I. Fig. 1.) But there was no ulceration near it, or any where in the canal; nor did the cut surface of the thickening give the appearance of the membranous septa common to schirrus. The rugous, strongly marked character of the œsophagus above the stricture, compared with its smooth appearance below it, serve to shew the great efforts made by its muscular coat to pass food through the obstruction.

Remarks. In the first of these cases, it is sufficiently clear that the patient's life was shortened by the making of a false passage with the bougie, into the windpipe. It is probable that a false passage thus made must always prove fatal; for, besides the difficulty of knowing when an instrument might be clear of it, and in the natural track of the œsophagus, there would also be another danger in the delay of waiting for the healing of this new opening, before attempts could again be made to find the natural channel; a delay that, in an enfeebled patient, would probably be ruinous.

The stricture must be daily and rapidly closing, the chance of success constantly diminishing, as there would be no power, even in occasional dilatation, to delay for a short time the fatal narrowing of the tube. In the urethra the case is different. The stream of urine, though diminished in size, passing frequently along its canal, would probably assist in checking its final closure from a stricture, when an interruption to the use of the bougie became necessary, from a false passage having been made by this instrument. This stream too, coming in a contrary direction from that of

the false passage, passes over its small orifice without entering it. But such advantages do not exist, where a false passage has been made from the œsophagus; no mechanical power for a moment keeps open the stricture, for none can safely reach it, from the danger of its taking the new road. There is no natural dilating power from the direction of the stomach, which would be the safest road. The only one left is so full of danger, that no prudent traveller would venture to encounter its perils. The bougie would follow the track of the new and ruinous opening it had already made, and food itself, the only natural means of temporary dilatation, could not be safely employed, for in the patient's attempt at swallowing, it would enter the trachea, (should the opening be in that direction,) and there excite a degree of inflammation in its mucous lining, that would greatly assist in bringing about a fatal termination, as in the case of Miss B. already described.

A false passage, therefore, from the œsophagus, is a much more important accident than one from the urethra; so teeming with mischief, and disappointment in the treatment of this interesting though desperate case of real stricture of the œsophagus, that too much pains cannot be taken in the formation of instruments, or in their employment, to avoid such a mishap.

In the female patient, the stricture was strictly membranous. There cannot be the least suspicion of malignancy in the nature of this case, and therefore I feel no hesitation in believing, that her life would have been saved by the destruction of the stricture. This might certainly have been effected by an instrument which could pass the stricture safely, and afterwards by its construction, and in its retreat, possess the power of breaking asunder the folds of membrane constituting it.

In a case like the second, there may be doubts about the complete success of any instrument, but still in this, the one described would be superior to all others, inasmuch that it may be used with perfect safety, as far as the danger of making a false passage is concerned. It may be objected, that in the case of a schirrous obstruction of the œsophagus, that the part would not dilate, and that the disease might be exasperated by the use of the instrument presently to be described. But it does not always happen, that there are no dilatable points left in the circumference of the œsophagus.

The schirrous thickening may only occupy one side or point of the tube, and in regard to the exasperation of the schirrus into cancer, we must first have evidence of the existence of the former state, which is not to be obtained, unless in one particular case, where the surgeon could not be mistaken.

If the patient has an ulcerated schirrus (cancer) of the œsophagus, he will spit pus mixed with blood, there will be pain of a lancinating nature about his throat—his pulse will quicken—his look be cadaverous—and he will more quickly emaciate than can be accounted for by the diminished quantity of food he swallows. In such a case, the chance of success from any instrument would indeed be but small, and the friends of the patient should know that nothing more than relief could be expected here. But, would a surgeon be justified even then in retiring from the patient; in doing nothing, in letting the tube be closed by the disease, without making an effort to widen it for the passage of food—for the prolongation of life—when he has full probability that it is in his power to carry this measure into effect?

In the worst possible case therefore of the stricture of the œsophagus, I am decidedly of opinion that a surgeon would not do his duty, who did not attempt to remove it, at least so as to clear a road to the stomach. Life is always dear to the majority of mankind, and a prolongation of it is frequently desirable. In the foregoing case of cartilaginous stricture, there cannot be a doubt of its prolongation, and even a strong probability of an ultimate cure being effected, had an instrument, such as I have the honour of submitting to the profession, been employed. The coarse and uncertain movements of the metallic sound cà et là, in improving the passage, were so decided and remarkable, as to induce the patient and his friends to believe that a cure was certain. How much more efficient would an instrument be, whose operation must have a precision, a power of dilating more or less, or even of lacerating, according to the will of the operator?

The instruments now employed in the treatment of strictures of the œsophagus, are the Bougie, made of cloth and wax: the Probang, or instrument with an ivory ball and whalebone handle: the Elastic Gum Bougie: the Caustic Bougie.

In a firm stricture, the danger of the cloth and wax bougie is very evident. If it be softened in water, such a stricture will turn its point backwards, or aside, and it is therefore inefficient. If it be not softened, but allowed to retain its original firmness, for the purpose of breaking the obstruction, its danger is conspicuous. Should the point not happen to rest exactly on the small aperture of the stricture, (and who can say, at such a distance from the eye and hand, where it may so rest) and the surgeon, imagining that it is rightly placed, proceeds to use some force, the œsophagus must then be penetrated. I have known this happen in two instances from the use of this bougie, although, in both it was curved to the shape of the throat, and in the hands of steady surgeons. The probang, made of the ivory egg-shaped ball, and whalebone handle, is altogether incapable of forcing, or passing a firm stricture of the œsophagus, and its peculiar spring-like structure, in other respects makes it act partially. A weak whalebone handle would bend against a stout stricture, and, if this objection was obviated by using a strong handle, the force employed by the operator to bend the spring to the curve of the throat, would act upon the ball, and this again upon the back of the pharynx, giving great pain, and doing violence on its road to the stricture.

Moreover, the action by the ivory ball under such a circumstance as a stout handle being employed, would be extremely partial, that is, it would act on the obstruction at the back of the canal only, leaving untouched or unoccupied by its point the front or sides of the canal.

This instrument appears to be fitted for the mere purpose of a probang; to overcome food lodged in the œsophagus, or to wear out by its gentle pressure, the spasm of a temporary stricture.

With regard to caustic bougies, the same objections against their use in urethral strictures hold with especial force against their employment in the œsophagus, or perhaps it would be more correct to say, there are still more powerful ones to be added why they should be rejected in the last case.

For example. The membranous stricture of Miss B. was diagonal, and its edge, which was very firm, would probably have turned a caustic bougie, softened by heat of the part, against the thin side of the tube.

Moreover, there is always some swelling and inflammation of the tube, in the use of the caustic, and in a narrow stricture the difficulty of swallowing from this cause is always increased, and sometimes deglutition is altogether suspended. The necessary delays thus occasioned in so urgent a case is no small objection to the armed bougie.

In the cartilaginous stricture of Mr. W. (Case II.) which was nearly an inch long, and a quarter of an inch thick, it would have taken the caustic two months to have travelled through it; making a fair allowance for the delays necessary for the separation of its sloughs!! And supposing the stricture to have been narrow where its use commenced, whether the interruption to swallowing either liquid or solid food by the inflammation excited, would not have starved the patient, long before the period when the stricture itself would have had this effect, must be left to the consideration of the reader. But the circle of the canal in the foregoing case was not at every point cartilaginous, these more dilatable points would have been discovered by one of the divisions of the dilator, and the patient thus have had immediate relief in the power of swallowing, as actually occurred when merely a common metallic sound was employed.

The use of the armed bougie is never followed by such immediate relief, which in an urgent case is an objection to it, and if it ever does succeed, it can only be through a tedious, uncertain, and highly dangerous process. Its first effect, by inflaming the passage, is always mischievous.

The best of the bougies which act from the point is that made of the elastic gum, but unless it be stiffened with cold, or still farther by freezing, a firm stricture will turn it back, and if stiffened too much, it has all the mischief, or nearly so, of the common bougie, for its point must be urged, and if placed wrong, it may thus be driven any where but through the stricture.

I had once occasion to see it so driven through the lower part of the pharynx into the neck, amongst the great vessels, around which it excited suppuration. (See the drawing.) It might have wounded the carotid artery, the jugular vein, or the eighth pair of nerves. Lower down in the tube, it might have been pushed through into the mediastinum, or into the thorax. Nothing therefore can be more dangerous than forcing a stricture of the œsophagus with a pointed instrument.

CASE III.

Death accelerated from a false passage made by the Bougie through the lower part of the Pharynx.

This portion of the pharynx hangs loose, and readily admits the point of a sharp, conical, bougie, to be entangled in the folds always found in it above narrow obstructions of the œsophagus, somewhat in the same mode as it would hitch in a membranous stricture of it lower down. Under such a circumstance, the texture of the part, thin, and capable of little resistance, admits the pointed instrument to penetrate its substance, upon the application of a very little force.

This patient had stricture of the gullet, impassable to a bougie, immediately opposite the cricoid cartilage, which had been teazed and inflamed by armed bougies to such an extent, as not to permit the smallest quantity of solid food, and very little of liquid, to pass the obstruction.

In attempting to pass a stiffened elastic gum bougie, with a sharp point, it was conceived by the surgeon that he had succeeded. On the following day the patient's throat was swollen enormously, a large abscess followed, and, as no food could be swallowed, he soon perished, from the combined effect of starvation, and the irritation of the abscess.

The perforation in the pharynx, and the dangerous spot where the point of the instrument had rested, are indicated by a common bougie passed through the opening. (See Plate.)

The instrument I have projected, as a substitute for pointed ones, may be used as a lacerator of the stricture, or as a mere dilator of it. It acts from its sides. It is made of metal, curved to the shape of the throat. The size of it is small, so as to allow its point to pass through any stricture with certainty, and without the slightest force. I have never met with a stricture of the œsophagus in life or in death, that would not readily permit the passage of so small an instrument.

The stricture which destroyed the patient, the subject of the second case, admitted a metallic sound of twice the size of the dilator, although it

was impassable to solid food. The drawing will best explain the structure of the dilator for the œsophagus stricture. A ball of steel is at the point of the instrument when it is closed; by turning its handle, this ball separates the instrument into three divisons, ascends in the centre of them, and in its route, enlarges the size of the dilator, as may be required either to dilate or to destroy. Its use should be prefaced by an accurate examination of the seat of the stricture, which is usually behind the cartilages of the larynx, and most commonly below the cricoid. The head of the patient being thrown well back, and the jaws fixed asunder by the mouth dilator, a middle sized brown bougie, curved and made soft in hot water, should be passed down the pharynx to the stricture, which is generally distant from the edge of the dentes incisores, about six or seven inches, or according to the stature of the patient, or length of the neck. The stricture struck, its distance should be marked by the thumb nail on the instrument, as it lies under the teeth. The soft point of the bougie will have received some impression from the stricture, and you may judge from this, and from the slight force you have employed, what sized dilator may be required. Having selected the proper size, the distance of the stricture from the teeth may be marked upon it with a small dentist, or Lancashire file, or any other mark; the exact admeasurement being copied from the soft bougie employed in the examination. The ball of the closed dilator should now be placed against the back of the pharynx, down which it should be permitted to slide till it reaches the stricture, or when it is ascertained that the mark is immediately below the edge of the teeth. If it should pass the stricture readily, but perceptibly, for an inch and a half, or till the file mark be over the tongue, it has gone far enough, and the operator taking the instrument in his left hand, near to its handle, should turn this last with his right, and its point will now be expanded, according to the width that may be required. It is now to be slowly, and steadily withdrawn through the stricture, which in its retrograde passage, it either tears or dilates, according to the judgment of the operator, from his knowledge of the quality or narrowness of the obstruction. If he wishes to dilate only, he will open the dilator slightly in the first instance, and, should the patient not then be enabled to swallow on its being withdrawn, he will repeat the introduction, and increase the dilatation until sufficient room be obtained—to admit of the passage of food to the stomach.

After the stricture has been opened, or sufficiently broken up by the dilator, so as to require no force from a pointed bougie, this last mentioned instrument may be used as a mere dilator, to finish; there being sufficient room left for its safe, that is, easy introduction.

Should the patient be starving, and the process of dilatation slow, he may be nourished readily by the apparatus used in the second case, before described. The hollow tube will easily pass the stricture, of a size sufficient to inject through it liquid food into the stomach. Should nothing else be at hand, a hollow metallic bougie will do very well for this purpose. Curve the instrument to the shape of the throat, (having previously opened its extremity, by cutting holes on its side,) and adjust its mouth to the pipe of Weiss's syringe, and, having passed the stricture, the food may be pumped into the stomach.

The quantity given should not exceed three ounces at a time, which may be repeated several times in a day. If more be given, the diminished power of the stomach will not be able to digest it, and its rejection will be equally certain. For its powers must be reduced in cases of stricture where the patient, for a long period, has been accustomed only to small quantities of food, and that perhaps chiefly of a liquid kind.

Overloading the weak stomach therefore, in this particular case, should be most scrupulously avoided, for, should vomiting be excited, in the weakened condition of the patient, this act itself would be directly injurious; and fatal, should the spasm of the glottis be excited by the irritation of food brought back to the pharynx, whilst the patient was, perhaps, in a recumbent position.

It is very true that the treatment by instruments of the subject of the foregoing Note, is so difficult and perilous, that many of our most eminent surgeons decline their employment. But what is to be done? or rather, are we to do nothing, but merely stand by the unfortunate patient, and witness, with calm and culpable indifference, his gradual approach to the grave for want of food, or rather the power of swallowing it; and this inability too arising out of a mechanical obstruction in the tube, whose office it is to convey the food to the stomach! If surgery be an useful and a noble science, and surely it is at once the most solid and brilliant of the

whole range of human acquirements; it is called upon in this particular example, of one perishing from food sticking in his throat, to shew itself, and come forth with such aids as the nature of the frightful case will permit to be employed. This very nature requires instruments, for the surgeon cannot escape from this trying example of his power, this touchstone of his skill, by consigning his patient to the tomb, "having done all he could" by prescribing the unfortunate being a dose of physic!! This is one of the cases that calls for instruments, for downright surgery—knowledge of the parts, —manual dexterity, and nothing else; physic here is altogether worthless, or nearly so, and may indeed be "given to the dogs," with as much propriety and utility as to the patient.

This however, is speaking of medicine as a principal in the treatment of stricture generally, whether of the urethra, rectum, or œsophagus.

It certainly cannot have any pretensions to so high a rank; but as an auxiliary, it may occasionally be useful.

There may be cases, for example, of stricture of the œsophagus, where around it may have been deposited great quantities of lymph, from an inflammatory action of its vessels; a simple thickening, without any malignant character being annexed to it. In such a case, mercury, or other medical agents, may be useful in exciting the absorbents, in aiding the instrument, which, at one and the same moment, be it observed, may be employed in dilating, or destroying the stricture, and in exciting by its irritation, the neighbouring vessels, to remove the hard thickening in question.

The treatment by instruments, that of dilatation or destruction, must ever be the cure of strictures, if cured at all. Medicines can have no power over structural derangements, like the bridle, or membranous obstructions. Ask the hospital surgeon, whether he ever thinks of medicine, in the great variety of strictures of the urethra, which fall under his treatment, and which he almost constantly cures?

It may be said that the case is different in the œsophagus. I do not see it. The extreme rarity of the real, or permanent stricture of the œsophagus, makes it impossible, from that cause, for us to draw our conclusions altogether, and with precision, from so confined a field of experience. But

then the analogy of structure is so close and undeniable with the urethra, that the most sceptical mind must be satisfied with the wide evidence furnished by it, and would not scruple to derive rules of practice therefrom for the œsophagus, which enables him so boldly and successfully to treat the urethra. The instrument for the one, however, requires infinitely more care in the construction, and caution in its employment. Life is at stake in the treatment of the œsophagus—a false movement is fatal. Minor evils, for the most part, are the results of error in our treatment of the urethra.

It is now thirty-two years since I entered the wards of the Gloucester Infirmary, as a pupil. It is a large hospital. But such is the rarity of real, or permanent obstructions of the gullet, that in hospital and private practice combined, I cannot satisfactorily make out a list of more than fourteen cases, which occurred during the whole of that long period. The majority of these were treated medically—they perished Others were treated with the pointed bougie, simple, or armed—I fear this treatment was equally unsuccessful. Where opportunities occurred, in these last cases, of inspection after death, false passages, or openings through the substance of the tube, were generally discovered, which either killed the patient outright, or accelerated his fate.

Preserve me, therefore, from the bougie which is to dilate or force this kind of stricture with its point!

Let its use be ever so skilfully conducted—the surgeon ever so remarkable for his knowledge—coolness—delicacy—decision, and manual dexterity, rare combinations indeed! still would I not suffer him to approach my person, had I a stricture of the œsophagus, armed with a bougie to act from its point. To escape from so dangerous an individual, would be the first and rational impulse of the mind, for man clings to life instinctively, even when he knows it to be burthensome.

NOTE III.

PROLAPSUS ANI.

On the falling down of the Bowel in grown Persons.

This is usually presented to the surgeon in a chronic form, and may originate, either from great costiveness, or any other cause which induces violent straining at stool, and by which the bowel, or its inner lining, is forced through the anus; or by an abstract weakening of the sphincter that admits the protrusion to take place under ordinary exertions.

This weakness of the sphincter may itself arise from irritations within the bowels, of which class of causes, purgatives, used immoderately, is a frequent one, by the incessant action, and consequent relaxation they induce in this muscle, which, in time, becomes so weakened, as to be utterly incapable of performing its office, of guardian to this important outlet of the body. To such an extent is its loss of power carried, that the falling down of the bowel, at first occurring only when the patient strained at stool, will take place on his rising upon his feet, the sphincter obeying not the will, but yielding, without resistance, to the incumbent weight, and the protrusion takes place.

Until the time of Mr. Hey, the chronic prolapsus of adults, so teazing, and destructive of all comfort, was without a remedy. Confounded with piles, (which are themselves confounded with every ailment about the anus) it obtained temporary relief from fomentations and ointments, appropriated to that complaint, and the gut was now and then, under this delusion, replaced in its proper situation by the patient, or the remaining vigour of the sphincter. For a time, all went on well, or was easily borne, but soon again the gut descended, began to bleed on these occasions, and ultimately, so greatly increased in bulk, as to become utterly incapable of

reduction. The miserable patient, wasted by bleeding, and incapable of motion, (which increased all the evils,) was left in this disgusting and helpless state, with the bowel hanging from his body, for the remainder of his days.

But Mr. Hey saw the magnitude of the evil, and projected an ingenious remedy. He took notice that the circumference of the anus did not always return to its natural smooth appearance, after the reduction of the bowel had been effected, in these cases of prolapsus, but that it was usually occupied by a thin pendulous flap of skin, or blueish tumour. He discovered, also, that in such cases the sphincter ani was in a state of relaxation. On these facts he planned his operation, which has been the foundation at least of much improvement in the surgery of the anus. "The relaxed state of the part," says this excellent surgeon, "which came down at every evacuation, and the want of sufficient stricture in the *sphincter ani*, satisfied me that it was impossible to afford any effectual relief to my patient, unless I could bring about a more firm adhesion to the surrounding cellular membrane, and increase the proper action of the sphincter. Nothing seemed to me so likely to effect these purposes as the removal of the pendulous flap, and the other protuberances which surrounded the anus. I hoped that the inflammation caused by this operation would produce a more firm adhesion of the rectum to the surrounding cellular substance; and I could not doubt that the circular wound would bring on a greater stricture in the *sphincter ani*."

This operation succeeded. It may be modified according to circumstances, but the principle is undoubtedly Mr. Hey's. By way of distinction, I will take leave to call it the Exterior Operation for the cure of the prolapsus ani of adults, in opposition to another mode, which acts upon the gut itself. This last may be denominated the Interior Operation for curing the prolapsus ani, and I believe that Mr. Copeland is entitled to the merit of its invention. The bladder and bowels having been emptied, the patient is desired to make efforts, to protrude the inner membrane of the bowel, which precedes the prolapsus. The surgeon now examines the prolapsed part, and selects a point or two of the inner fold which looks redder than others, and may perhaps bleed. This fold is drawn out by an assistant with a tenaculum, on the full stretch, and around the root of it the surgeon casts

a silk ligature, which is drawn sufficiently tight to produce adhesive inflammation, which unites this fold of inner membrane to the muscular coat of the rectum above, after the reduction of the fold and its ligature has been effected. For, after the ligature has been cut close to its knot on one side, the fold of intestine is returned to its proper place through the anus, leaving the other portion of the ligature hanging out of it. This will come away in a few days, with the stools, the passing of which is very painful for a few times.

Great pain will often follow this operation, which is very alarming, requiring opium in considerable doses; but it is asserted that no danger is annexed to it from the supervention of inflammation. I cannot well understand this; the gut itself is tied, and tightly, and pain, the effect of this violence upon so delicate a part, always follows, and if inflammation under such circumstances does not sometimes succeed, it is a very surprising circumstance. At all events, the pain and suffering after this operation is an objection to it, of which the exterior one is devoid, when properly done. To wound, irritate, or commit violence upon the tender bowel is surely wrong; you can succeed without any such serious inflictions of injury. In general it may be, as it is said, that this interior operation does not produce danger. Some persons may have been bled in a vein repeatedly, without danger following, and then, upon wounding its inner lining in another, it inflames, and he dies of phlebitis. In the same way, I must suspect that inflammation may now and then be propagated along the mucous lining of the bowel, and enteritis succeed; but *here* there is no such obligation to injure this lining, which in bleeding is unavoidable.

Another objection to this mode of operating is, that in a large prolapsus, the fold or folds taken up by the ligature must be more extensively done, increasing the risk of inflammation in a proportionate degree: and lastly, when the ligature employed has not been drawn sufficiently tight to ensure the adhesive process, the complaint will probably return, which I understand is a frequent occurrence.

To the external operation by excision there is one objection—it is sometimes followed by hemorrhage. Out of fifty cases, I have seen only a single example of this kind in which there was danger. But this very danger could have been avoided, in that, (as it can in all others of the

kind,) by attending to the rule of encouraging the bleeding to occur, before the departure of the surgeon, or his assistant, when the vessel may be secured.

Mr. Hey, and others too, who operated exactly after his manner, had occasionally inflammatory symptoms succeed the operation. This must have been the effect of cutting away without scruple, and often deeply and roughly, the little blue tumors at the verge of the anus, many of which were formed by the extremity of the anus itself. There is no occasion for this to be done; the gut ought not to be unnecessarily cut, and in this point Mr. Hey's operation may be improved. A deliberate dissection will always be capable of separating the loose skin which you require for excision, from the bowel itself, which should be tenderly and carefully returned. Out of the fifty cases in which I have operated, I have not seen one where the operation was followed by inflammatory symptoms, nor (with one exception,) where it did not succeed in entirely curing the prolapsus.

Prolapsus Ani is frequently combined with other affections.

I will now take leave to give a case of its most simple form, and afterwards a few others to illustrate its varieties, or when in conjunction with other affections, some of which, it will be seen, were the true causes of the prolapsus itself. It is a subject, on which less has been written than its importance requires, and is, perhaps, less generally understood, than it deserves to be. With this belief, I may be pardoned for recording a few of the more interesting examples out of my own experience, which has been considerable.

CASE I.

The simplest form of the falling of the Bowel.

A Gentleman, about fifty years of age, when taking exercise in walking, would have the bowel descend to the extent of two or three inches beyond the verge of the anus, and also after a stool. Some bleeding would then take place from its surface, the effects of the squeezing of the sphincters. The pain on these occasions was so intolerably severe, as to oblige him, even in the field, to lie down instantly upon his back, and reduce the protrusion, which he could always effect, by gentle pressure. The repeti-

tion of his sufferings in this way, for years, at last led him to his surgeon. By straining, as at stool, at my request, the gut was brought into view, in folds, forming a tumour about the size of a small lemon, surrounded at its base by several loose projections of purple looking integuments, which the gut, in its descent, had brought more completely into view than it could have been before such descent took place. He was now in dreadful pain; the bowel was of a dark red, or purple tone of colour, from the pressure of the surrounding sphincter. From this circumstance, together with the fact, that the bowel never descended on rising out of bed in the morning, and only after much straining at the water-closet, or in walking exercise, I suspected that this muscle was still strong, but not sufficiently so to prevent the gut passing through it.

On reducing the prolapsed part, this was found to be the case. The sphincter, irritated by the protruded part, which had just re-ascended, still acted sharply upon my fingers, now engaged in an examination of the interior of the gut.

It was sound; neither could a stricture, which should be carefully sought for, be discovered. The smooth and natural feel of its canal indicated no other affection, and the anus now presented, on one side of it, only a small blue projection of integuments about half an inch in depth, whilst, during the descent, several elongated portions of a similar character surrounded it. I informed the patient, that there was no doubt of his being entirely cured by an operation, and explained to him that this object was to strengthen and assist the weakened sphincter, to restrain the bowel in its proper situation by a firm barrier; that from the circumstance of there being considerable power in that muscle, I thought that the mere removal of two or three folds of the loose skin, which appeared principally when the gut was down, would suffice, without the necessity of more extensive excisions of it, which are required when the power of the sphincter is more diminished.

He consented to the operation. The day before, the bowels were well cleared, and he took no solid food,

The patient lay with his belly upon an elevated table, the feet upon a raised footing, so as to bring the buttock sufficiently near to the eye of the operator, who should stand; for in operations about the anus especially, the surgeon will find this position more convenient, in order that he may more

readily vary his movements. The gut was now brought down by straining, with the folds of loose skin more apparent. It was replaced sufficiently to keep it clear of the knife, and a full sized rectum bougie passed a little way into its canal, but not so far as to carry back the folds of loose skin at all out of the view of the operator. The bougie of a full size is useful on this occasion, for as the patient should have to bear down, to bring the whole of the loose skin outside the anus, the gut would descend at the same moment, were it not for the instrument. I selected five of these portions of integument, passing a thread though each, and drawing these in succession with some force along the bougie which kept the gut back, they were excised very close to the plane of the surrounding parts. The wound was well washed with cold water, the gut completely restored to its natural position, and an appropriate compress and bandage applied to support it there, as the tendency to its descent is always increased by the operation, until the excisions are contracted and healed. A pupil was left in attendance, to see that there was no hemorrhage, to which this operation is rather liable, and of which nearly a fatal example will be found in a succeeding case. In the evening the patient complained of violent pain. On examination, the gut had descended in his attempt to pass air. The pain was doubtless the effect of the pressure of the sphincter. The gut was replaced with a globular compress fixed over the site of the anus, with an injunction to the patient, to restrain his inclination to pass wind.

It is better to keep the incised part quiet, for the purpose of healing firmly. To obtain this object, the patient should have no stool for some days, unless called for by inflammatory symptoms, which I never saw occur after the operation, although from the collection of air in the intestines, wandering pains about the belly will sometimes take place, and might be confounded with inflammation, were it not that the usual signs of its existence are wanting.

That the cut parts may be more completely undisturbed for some days after the operation, it is better to give no solid food for a day before it, and to clear the bowels well.

The contraction of the anus in this case was so great in the healing of the incisions, as to be somewhat inconvenient in passing the stools. A bougie used occasionally remedied this, and the patient has been entirely cured for some years of his distressing complaint.

CASE II.

Prolapsus Ani, with the power of the Sphincter extinct. The operation for which was followed by a bleeding, which nearly proved fatal.

The lady of a military man of rank, living at a fashionable watering place, consulted me, by the advice of her physician, for a falling down of the bowel of an immense size, and which was almost constantly prolapsed, as even standing for a moment would effect its descent.

The lady was old, and of a very relaxed habit. The protruded part was replaced easily, and the clenched fist would, with equal ease, have followed through a sphincter which had no trace of the power of contraction left.

There was nothing unsound in the canal of the gut, nor stricture of it; which last affection I have seen to produce a protrusion of the lower part of the bowel.

In this case, the cause was, probably, the long continued action of purgative medicines, in which injurious habit she had indulged for many years.

There was very little of loose integument about the verge of the anus, and from this circumstance, together with the destruction of the power of the sphincter, there were but slight hopes of a cure, though there might be of some amendment, from an operation. I explained this to the husband, who, however, at the desire of the physician, wished that a trial might be made. Lodgings were procured, and it was done. Taking some points of slightly projecting skin for a guide, considerable portions were raised from the inner margin of the anus, so that a wound was left which nearly surrounded it; no bleeding then took place, and after a compress and bandage were applied, I left the patient in bed, under the care of a pupil, to attend particularly to any hemorrhage that might probably ensue from so extensive a circumcision of skin. He remained with the patient for an hour, but unluckily, a feeling of false modesty prevented him from examining the bandages before he left.

About two hours afterwards, I was sent for in haste—she was said to be bleeding to death. Though cautious in taking the necessary steps to prevent secondary hemorrhage, yet was the surprise at the spectacle before

me, from so trivial an operation, only exceeded by the shock it excited, and the train of painful feelings which followed.

My own responsibility, (for in this operation it was justifiably stated there was no danger, or risk of life,) the rank of the patient, and her obvious and immediate danger, from the error of the pupil, created feelings which may be better conceived than described. She was lying upon her back—motionless, or with a little tossing of the arms, muttering incoherently a few broken words—cold—with a blanched and ghastly expression of countenance—pulse scarcely to be felt. The bed smelt strongly of blood, and on turning down the clothes, she lay soaking in it; the steam from which rose, and yielded, by association, a horrid and sickening impression of her fate. I first poured down her throat a large quantity of brandy, and then proceeded to examine the wound. It did not bleed. More brandy was given, she was well covered with blankets, and had bottles of hot water applied to her feet. A small vessel at length shewed itself on the right side of the anus, which was secured. The pulse rose, warmth ensued, and with great attention, and abundance of stimuli, she became safe, after an immense loss of blood, at seventy years of age, from the bleeding of a small artery, of some hours' duration.

Happy would it be for reckless young operators, to meet with so salutary a lesson in early practice. It would not be soon forgotten: thus teaching, better than rules, the necessity of the most rigorous attention to the precautions for the prevention of secondary hemorrhage, and to an early detection when it does take place, which last was here altogether overlooked by the pupil.

The operation succeeded in restraining the prolapsus better than was expected.

The bowel descended in some degree after the healing of the wounds, when she was at the water-closet, to the extent perhaps of one fifth of its former size.

With the aid of a spring truss with a spherical pad, the prolapsus ever afterwards was very tolerably manageable; the patient could now walk about without its recurrence.

CASE III.

Prolapsus Ani, irreducible from extensive adhesion to the surrounding skin of the anus, cured by operation.

Mrs. ———, aged forty-four, the mother of many children, had a prolapsus ani for four years, and during the whole of this time, she did not think the gut ever went back, but has remained projecting in concentric folds from the anus, like a small bunch of red roses, in the centre of the loose skin which surrounded it. Upon examination, I found the bowel adherent in several points to the skin, which circumstance retained it thus within the sphincter, and in a state of constant prolapse. This muscle however, was amazingly relaxed, exhausted from the long residence of the gut within it, so that after having reduced this part with much trouble, I could easily pass two or three fingers through the former.

The gut, either from its external adhesions, or the inefficiency of this weakened muscle, soon descended. During the short time, however, of its replacement, I observed the circular folds of skin about the anus, which were about half an inch in length, and it was evident, from the great relaxation of the sphincter, that they must be removed very extensively, and close to the plane of that distance which is between the outer margin of the anus, and the termination of the intestine. I saw also that I should have some trouble in dissecting this skin away, and separating the intestine from its points of adhesion with it. After clearing the bowels well on the previous day, and permitting the patient to take slops only of gruel and milk, I proceeded to the operation, endeavouring first to remove the gut out of the way, by reducing it, and then restraining its descent by the introduction of a large bougie, whilst I dissected the skin freely away, by the side of the instrument, from the anus and bowel. But still the gut would descend, or was pulled down by the adhesions by the side of the bougie in places, and I therefore ultimately had the intestine held aside by the assistant, whilst those adhesions were separated, and all the loose skin freely removed, which was pulled out forcibly from the anus with a tenaculum. It was curious to see, as soon as the incisions were completed, the muscular coat of the intestine, together with the relaxed sphincter, begin to act vigorously, and carry the gut into its proper place, and retain it there with ease, whilst

all my attempts to accomplish this with my own fingers were unavailing. The stimulus of pain, coupled with the liberation of the adhesions, was probably the source of this renovated vigour.

When it is desirable to make the adhesive process as firm and as contracted as possible, I am in the habit of laying pieces of sponge upon the anus, and filling the hollow of the buttock with it, so that considerable pressure is made upon the part, which is already contracted or tucked up: the muscular action is assisted in retaining that tucked-up character by the external pressure.

On the night succeeding the operation, she had some pain about her sides when she inspired deeply, was frequently sick, (indeed nothing remained on her stomach) but her pulse was not at all quickened, and she was free from heat. From these latter circumstances, but especially from there being no tenderness about the abdomen when pressed, it was clear that the symptoms did not arise from inflammation, but from simple irritation. Her stomach, she said, was unusually disposed to sickness when in health, and irritation of any kind was likely now to excite this organ. On removing the pressure with the sponge and bandages, she spoke of instant relief, and soon after, indeed, all the irregular symptoms vanished. This was probably the cause of the vomiting.

I kept this lady lying down that no superincumbent weight might keep the healing parts on the stretch, and she recovered, with the anus as smooth as it ever was, though the aperture required, from its small size, a little enlargement occasionally, with a candle, to make sufficient room for the fæces to pass.

CASE IV.

Prolapsus Ani, with adhesion of the gut to a portion of the skin near the Anus, forming a tumour.

The subject of this case was a maiden lady of forty years of age. The tumour was about the size of a double walnut, and a close examination proved it to be the lowest portion of the bowel adherent to a portion of loose skin just within the anus. The inner side of the tumour formed by the intestine had a very deep red, or purplish tone of colour, the external

side was whiter; the line of adhesion was distinctly visible on a narrow inspection. But for this sort of careful inspection, the purplish, hardened appearance of the tumour, partially obscured by skin, might have confounded it with the hemorrhoidal excrescence, and thus have consigned it to the knife or ligature. The squeezing of the sphincter, when down, made it of its purple hue, and often to drop blood; the pain from the same cause was excruciating, and remained until the part was reduced to its situation within the bowel, above the sphincter. When the tumour was reduced beyond this muscle, there was yet some remains of its size in the canal, but this, I was satisfied, was the effect of pressure, and deposition of lymph, which the part had undergone when down, gorging and thickening the whole mass of tumour: but in this also was seen a difference in character from the simple prolapsus ani. There was no other morbid change within the gut.

The operation consisted in separating, by dissection, the fold of skin from the intestine, removing it only at that point, to a certain extent, sufficient to ensure an union to the sphincter by the adhesive process, which would also strengthen that muscle, and somewhat narrow the aperture of the anus.

The sphincter acted vigorously from the irritation of the cut, and rapidly carried the gut out of sight, into its proper place. Upon examination, there was still left a portion of the tumour on that side of the bowel, within its calibre, but I knew, from experience, that this would quickly disappear, a circumstance that I have always known to happen in every case of tumour within the bowel, which has been formed by the pressure of the sphincter, when that part of the bowel had been much down. The operation prevents any further descent, and the remains of the tumour disappear by absorption within the gut.

The lady was cured by the operation for the prolapsus.

CASE V.

Prolapsus Ani of long standing, with a tumour suspended from the inner margin of the anus. From my son's Case Book.

'Elizabeth Hunt was admitted into the Infirmary, under Mr. Fletcher, in October, 1827, on account of a prolapsus ani, with which she had been afflicted for nearly twenty years. For several years the prolapsus has been

accustomed to take place, not only when striving at stool, but also on her using any exertion, such as walking, or lifting weights, and has often descended on her first getting up in the morning. She describes the pain which she has been used to suffer, during the time when the gut was down, as having been exceedingly severe. Oct. 30th being appointed for the performance of the operation, she took, on the preceding evening, Ol. Ricini ½oz. which produced her three or four evacuations.

Before performing the operation on Tuesday morning, the 30th, Mr. F. desired her to get down the prolapsus, which she did by striving as at stool. The parts then presented the following appearance. The gut which came down in the centre was distinguished by its folds of a bright red colour, and was surrounded on all sides by a loose, corrugated fold of grey integuments, about an inch in depth. From the right side of this, and deep within the verge of the anus, there hung, by a long pedicle, a cartilaginous tumour, about the size of a large garden bean. On one side of the orifice, a smooth, light purple, shining surface presented itself—part of the mucous lining of the intestine.

Mr. Fletcher cut away the small tumour at the farthest end of its pedicle, and then introduced an elastic gum bougie, of a large size, a little way into the rectum, which carried up the gut out of the way, and left the instrument surrounded by the above mentioned loose fold, or curtain of integuments.

Through the two most projecting points of this curtain, which were nearly opposite to each other, Mr. F. introduced successively two curved needles, armed with double ligatures. He then drew forwards one of the ligatures, and with the scalpel cut away the loose integuments which it drew forwards. The same was repeated on the other side. The bougie being now withdrawn, the remaining parts slowly retired within the orifice, leaving no marks of the incision. A small part of the ring of loose integuments was not removed. The patient, feeling rather faint from the pain of the operation, lay down for a few minutes on a bed in the room, and afterwards went down into her ward. Scarcely any bleeding ensued. She took no medicine of any kind, but was ordered to be kept upon slops.

Nov. 1st. To-day she is much better; she got some sleep at intervals last night, which was not the case on the night following the operation; she says that she has felt less pain since the operation, than she has been

suffering for some time previous to it. Very slight febrile symptoms have come on, and no inflammation, except at the part which she keeps wet with the ward lotion. She describes the pain which she experiences as an aching and burning sensation. There has been no descent of the gut, nor any feeling like it, since the operation.

2nd. This evening she expressed a great wish to take some aperient medicine, on account of a pain, and burning sensation, which she thought would be removed by relieving her bowels. Ordered, Olei Ricini ½oz.

3rd. The nurse having given her a much larger dose than was ordered, it has operated violently, producing six stools, with great pain, but no descent of the gut has taken place.

4th. To day she expresses herself as being quite comfortable.

8th. Having had no stool since the third, she took an aperient draught last night, which has operated well, without giving her much pain. She appears much better than before the operation, and says she has not been for a length of time so free from pain, as since the operation. She goes about the ward commonly, and did not keep her bed strictly, for more than three days after the operation. Discharged cured.

On examining the parts prior to this woman's discharge, there was a very slight appearance of the gut, when she strained, on the side of the anus where the bit of loose skin had been left; but which Mr. F. said was of no consequence, and would disappear as the wounded part became firmer.'

The three following cases will shew the necessity of ascertaining, as far as can be done, the causes of prolapsus ani, before its radical cure by operation be attempted, and especially of examining the whole of the rectum, to make out whether a stricture exist in any part of it.

To be content with an examination to the mere extent of the finger, is inadequate, and improper. A bougie should be passed its whole length, adapted, by bending it in warm water, to the curves of the gut. A stricture in it will be seen to be capable of protruding the extremity of the bowel, by the great efforts it causes the patient to make, to obtain an evacuation: a fact which I do not remember to have seen recorded, as among the causes of the falling down of the gut.

It is a fact, however, well worth knowing; for should a stricture exist, as the cause of the prolapsus, it would be useless to attempt its cure before the stricture was removed. The patient would undergo a painful operation to no good purpose, and the operation itself, with the operator, would acquire no credit.

CASE VI.

Prolapsus ani conjoined with stricture of the rectum, which produced it.

Miss ———, about twenty-five years of age, consulted me respecting what she called piles, with which she had been afflicted for nine or ten years, and for which she had medical advice during the whole of that period. She was emaciated, and, from long suffering, in a state of great nervous excitement. She, however, detailed her sufferings with so much accuracy and force, that, without an examination, I took leave to say that I suspected her disorder to be a falling down of the gut. Something, she said, came down after every evacuation, but would return into the body by lying on the bed for an hour or two.

But she described other symptoms, not common to a prolapse of the bowel.

After the bowel had regained the pelvis, burning pain occurred, and continued about the anus, and along the lower part of the back. She could not walk, indeed she had not walked for two years, for when this exercise was attempted, the bowel descended; so that, between the pains endured after every evacuation, and that which followed occasional descents from standing, she was rarely easy, and this accounted for her worn and distressed appearance. Her stools were passed with great difficulty, (excepting when taking aperients,) and were remarkably small, resembling worms. Her sister died of a diseased rectum.

Upon a view of the anus when the patient was standing, there was on its right side, a large fold of the inner membrane of the gut presenting itself, which she said was not at all equal in bulk to that which followed an evacuation.

On straining in imitation of that act, the whole, or nearly so, of the lower extremity of the bowel passed through the sphincter. I replaced it gently, and attempted to introduce my finger, as usual, into its interior for examination. But at about an inch and a half I found a stricture, so narrow as not to admit at first more than the top of my little finger. By subsequent examination, I found the gut to be contracted as far as my finger could reach from the point already named, and so exquisitely tender to the touch, that more than once the patient nearly fainted from the agony she endured. The gut too had thickened very considerably the whole distance the finger could travel, and was evidently in a state of inflammation.

She had been subject to difficulty of passing her motions, with the subsequent burning pains, for many years, and could seldom well succeed without physic; but the tumour or falling of the bowel was of about three years' standing. I had no doubt, from this description, that the stricture by exciting straining at stool had prolapsed the lower folds of the bowel, and that the former should be cured before any attempt was made, by operation, to cure the prolapsus. The opinion given, as to the general result, was a cautious one, from the great change the intestine itself had undergone from its natural feel and thickness. The stricture, fortunately, was dilated by a careful use of the bougie, for four months, so as to admit a full size one to pass nearly eleven inches.

During this process the patient was constantly crying out for physic —for calomel—for she was bilious, had a liver complaint, and so forth. But I thought she, and her rectum too, had experienced enough of this medicine, the irritating quality of which, upon this part, being too much overlooked in affections of it.

I begged her to be content with small doses of castor oil: after one of which I did the operation for the prolapsus ani, which succeeded very well, so that in five months she got rid of very serious complaints, that had existed for a great many years, and from gloomy apprehensions of premature death, this lady's thoughts took another, and a very different direction—she married—and is now become a fine, healthy young woman.

OBSERVATION.

The foregoing is a very serious example of the folly and mischief arising out of the practice of prescribing for *supposed* complaints, the product of the patient's own judgment or imagination, the real nature of which might have been readily discovered by a proper examination of the parts concerned. No examination was ever made, in this case, until the lady came under my observation; and even then she said her malady was piles; and they all say so. All the various affections of the anus are so called by the patients. But the medical man ought not to copy the errors of his patient, to believe without evidence or conviction, which will assuredly lead him to prescribe for diseases which exist only in their conjoint imaginations.

Here was a young lady who lost many of the best years of her life, and what was worse, spent them in wretched suffering, or in swallowing loads of useless medicine; nay further, who was carried into the very jaws of death, by one complaint of a very trifling nature being mistaken for another of the highest importance to comfort, and to life itself.

Had an early examination of the parts concerned been carried into effect, the true affection would have been quickly revealed, and the sad miseries she subsequently endured, wholly prevented.

When a discovery of the real malady was at length made, she was cured, without any medicine, in fewer months than years had been previously occupied in pursuing a wrong course.

This case then will furnish another valuable lesson, which indeed may daily be taught, if we would learn, viz. — never to prescribe for affections of the anus, without a proper visual and manual enquiry into their real character.

CASE VII.

Prolapsus ani, with a Stricture of the Rectum, which produced it.

A lady, about forty years of age, had been operated upon with a ligature for a prolapsus ani, by a distinguished metropolitan surgeon, but she now consulted me on account of a return of the complaint, and for some distressing symptoms, which were increased by the foregoing operation. Since this was performed the bowel had never descended in walking, which it always did before, but it did after every evacuation, though not so largely

as anterior to the operation. So far the operation had been useful; but she declared that the difficulty of passing her stools was more great and distressing than ever. To a question whether for some time previous to the falling of the bowel, she had been accustomed to costiveness and difficulty in the passage of her stools? she replied without hesitation, that for years this had been the case, and also that her stools were very small in diameter, and scarcely ever passed without the aid of medicine.

On examination, the anus had a natural appearance, but on requesting her to bear down, a portion of bowel descended surrounded by a pendulous flap of skin, so that, on returning the protrusion, the fingers easily followed in its track.

The sphincter was relaxed, but there was nothing within the reach of my finger that could impede the passage of the fæces, nor was the gut itself unsound.

A bougie, however, previously softened and bent, discovered a stricture, at a distance of five inches, which has hitherto resisted all attempts to pass it.

This lady has wandering pains about the lower parts of the abdomen, loins, and lower in the back. The whole alimentary canal is disordered from the interruption given by the stricture of the rectum to the perfect circulation of its contents:—the stomach is injured, digestion is imperfect, and there is considerable pain in the left groin. The head sympathises with this disturbance of the digestive organs—she is nervous—confused—and giddy.

March 10. A bougie at length passes the stricture, and when the operation for the prolapsus has been performed, she will probably recover, after years of suffering.

This case furnishes another example of the propriety of tracing, if possible, the causes of prolapsus ani, and especially whether there be a stricture of the rectum, which, by inducing great striving at stool, will produce it, or at least, in co-operation with the more ordinary causes, will have a principal share in producing it.

No examination of the rectum, (of a kind likely to discover a stricture at a distance of five inches from the anus) was made by the eminent surgeon who had here operated for the prolapsus.

It is true that he might not have supposed that stricture of the gut could effect the propulsion of its loose folds through the sphincter. He might, or might not have conceived, that the purgatives to which she had been accustomed had weakened the sphincter, and he sought no further.

The contraction of the bowel, through the medium of the several instruments employed, gives a sensation of roughness and hardness; the last quality equal to that of cartilage or schirrus; but this lady has not the look or constitutional character of the last affection; neither is there any discharge from the gut.

But this case, when offered to his notice, possessed the symptoms of a stricture of the rectum, independent of the falling down of it, and as the cure of the latter could not be effected whilst the former existed, it would have been right not to have overlooked such symptoms, by the discovery of which an useless and painful operation might have been prevented, and which would also have led to the proper steps for the relief of the original affection, the stricture itself.

CASE VIII.

Prolapsus Ani, produced by Stricture of the Rectum, cured for a time by operation; but the stricture having been overlooked, a Procidentia followed, with Fistula in Ano.

A lady about fifty years of age, the mother of many children, had undergone the operation for prolapsus ani, performed by excision, which succeeded very well, for a time, in keeping the gut in its place; but she soon discovered that a difficulty, which she always had in passing her evacuations, remained, indeed it was rather increased; and to this was added very considerable pain, and a feeling like that of protrusion, to which she had been accustomed before the operation. Neither herself nor her maid, however, could distinguish any external appearance of the gut protruded, as formerly, at the anus.

After a time a swelling took place by the side of the anus, which her medical attendant described, by letter, as an abscess, and my attendance was requested.

There was an abscess on the right side of the rectum, that appeared to have arisen from the painful irritation of the gut, which was discovered to have descended and resided almost constantly within the occasionally painful gripe of the sphincter, but never passed through it so as to be seen externally.

The operation for the prolapsus, therefore, had either been incomplete, (enough of skin not having been removed to produce a sufficient contraction or check to the descent of the bowel,) or this latter circumstance was the effect of great straining at stool, from some causes seated higher in the canal. This cause was probably a stricture, from the small size of the stools, their difficult passage, the filling of the colon with air above the left groin, which was often painful, and from this air never, or scarcely ever, passing downwards.

But I was compelled to attend to the abscess first. This, with the gut, which was bare from the destruction of the cellular membrane in its neighbourhood, was opened, and some portions of loose skin removed, which were very distinct in the usual place.

Before the wound was healed, this lady came to Gloucester, to be satisfied on the score of the suspected stricture. One was discovered at four inches and a half, which is not wholly removed, though a bougie of a moderate size is passed three times a week. No recurrence of the procidentia has taken place hitherto, and it is probable that none will, since the patient can have no occasion to strain so much, (from the removal of the obstruction in the gut,) and the barrier at the sphincter is firmer and more complete.

In my own practice, the prolapsus ani has occurred much more frequently in females than in males, in the proportion of seven to one; a fact that may probably be accounted for on the ground of their relaxed texture, and indulgence in physic, which must ever weaken and relax the parts concerned in this very distressing and disgusting complaint.

ADDITIONAL CASE.

Prolapsus Ani, from a Stricture of the Rectum.

Feb. 28. Mrs. ———, of this city, consults me for an appearance at the anus, and for a great difficulty in passing her motions, which she as-

cribes to this substance. The strainings at these periods are very severe; she never suceeeds now without the previous employment of powerful purgatives, and when occasionally some time back, an evacuation was procured without such aids, the size was not more than one third of those noticed when in health.

After success has been obtained by medicine the protrusion or substance appears externally in the greatest quantity. If she strain at times when physic has not been used, a slight protrusion only is the effect, accompanied with general bulging about the orifice of the anus.

At these times of striving, there is a sensation of obstruction and tightness below the umbilicus, as if the contents of the bowels could pass no further. When medicine has acted fully, this sensation wholly disappears for a time.

She is flatulent, but little or no air passes through the rectum.

On inspecting the anus, a hemorrhoidal tumour only appears on the right side of it. But when the lady is instructed to bear down in imitation of the act of impelling the motions, a large fold of the bowel makes its appearance, which is the substance the patient speaks of that constantly follows an evacuation, and which she conceived to be the cause of the obstruction, by filling up the passage.

Suspecting from the great difficulty of procuring evacuations; the straining; the constant sense of stoppage low in the belly, and the small size of the natural stools, that there is a stricture, that the prolapsus is a secondary affection, I now attempt to pass a bougie, properly softened and adapted to the curves of the bowel, and discover a stricture of a very obstinate kind, at five inches from the anus. No instrument will pass it.

This is, doubtless, a bad stricture, and is probably the effect of an attack the patient experienced twelve months ago. I attended her at that time, when labouring under a most severe bowel affection, which was distinguished chiefly by incessant vomiting of green matter, acute pains across the belly, and most obstinate constipation.

This patient has now a sinking at her stomach, great flatulence and uneasiness after dinner, languor, and other signs of indigestion, which symptoms may arise from the disturbance of the digestive organs, from the obstruction in the intestine, or may, in part, be the effect of the low and

depressed state of her mind, which has been harassed with constant apprehensions of evil since the prolapsus made its appearance some months ago.

She is desired to live upon light and farinaceous diet, and to have the rectum cleared in preparation for my next visit.

March 4. This is certainly a firm and serious obstruction in the bowel, but as it is without pain of a lancinating nature, or bloody discharge, it is probably not malignant.

Large bougies will not enter the stricture, the small ones bend against it and are turned backwards. I am in doubt whether a small instrument passes or not.

Writers on stricture of the rectum may have mentioned prolapsus as an occasional effect of it. But I do not remember any writer on the prolapsus ani itself who has considered stricture as one of its causes, and thence derived a rule to examine the whole extent of the bowel, previous to any operation for the cure of the first affection.

Perhaps none of the minor operations of surgery require more tact and experience than this examination of the whole course of the rectum with the bougie. The natural obstructions in the canal are many, and may be still more numerous from disease and other circumstances; and such difficulties can only be met successfully by a knowledge of the anatomy, natural and morbid. The angles made by the bowel itself, the projection of the sacrum, an enlarged or retroverted uterus, or prostate gland, a spasmodic stricture, or hardened fæces, are all to be taken into consideration, and well remembered by the surgeon, otherwise he may take some of these obstructions to the passage of the bougie for a stricture, when, in reality, no such affection exists. The character of the bougie itself may increase the difficulties.

If it be too small, or too soft, these natural obstructions to its route will turn back the point, and leave it curved in the bowel, thus confirming the original error.

NOTE IV.

Chronic Abscess on the Cheek, assuming, in some degree, the character of a tumour, from the irritation of a carious tooth, or its fangs.

I have made a memorandum of this affection, as it is, perhaps, not generally understood.

The swelling is of a pale, purplish red colour, and is gently raised above the plane of the cheek, giving something of the appearance of a strumous abscess, with its low tone and imperfect suppuration. This tumour, however, has a firmer feel than the abscess, and the skin covering it looks thicker.

This resemblance to a strumous swelling, which is so common about the jaw, is a principal source of the two affections being so commonly confounded, and will serve to explain, in some degree, the erroneous treatment employed for the cure of this particular affection.

I have known it cut out from the cheek, by clever and experienced men, as a tumour that could not be got rid of without; and I have known it opened, causticated, and treated in all manner of ways but the right one, which is by extracting the fangs of a carious tooth, which will always be found placed opposite to it. It is barely supposable that opening the swelling, (in the interior of which will be found a small quantity of unhealthy pus, mixed sometimes with a slight fungous growth,) and treating it in the ordinary way, may occasionally succeed; because the fangs themselves may in time recover, which is the cause of it. But such treatment, by neglecting the cause, is unscientific: moreover, a large deformed eschar would be the effect, and which would have the additional advantage of looking exactly like the remains of a scrophulous abscess.

On removing the tooth, with its fang or fangs, the tumour gradually disappears without further treatment.

The fangs of the tooth will have attached to them a small fungous growth, resembling the fungus found in the interior of the tumour.

It is somewhat odd, that I should never have seen this chronic tumour opposite to any other teeth than the first molares of the lower jaw, out of many cases that have fallen under my notice, though doubtless it must occur from the irritation of other teeth, as well as the first molares.

The history of this affection will, on enquiry, be found to be this—the carious fang excites some inflammation in the socket, which generally suppurates; the pressure of the matter induces the ulcerative process outwardly, for its escape. But, during this process of painful irritation, that portion of the cheek which is immediately opposite the disturbance in the alveolar cavity, sympathizes slowly with it, and the chronic abscess, or tumour in question, is the consequence.

The effect on the cheek may take place, from the irritation of the diseased tooth, before the inflammation in the socket has advanced to suppuration; or this last may not happen at all, or so slightly as to escape the recollection of the patient. I will give one

CASE.

Anne Kirk (see sketch) had an oval kind of swelling on her left cheek, covering the lower jaw, which she said had been there for five months. It was a pale, greyish red elevation, in patches or projections, and very like the appearances of those frequent scrophulous abscesses on the neck of very feeble growth, which will burst in time, by a small opening oozing a little serum, but not wholly discharging their contents, so that the swelling is sustained.

On putting aside the cheek, the crown of the first molar tooth in the lower jaw, just opposite the swelling, was observed to be missing; the heads of the fangs were visible, and there had been, about three months ago, (two months subsequent to the swelling of the cheek) a gum abscess, the little pouting mouth of which was also visible.

Some very slight pain had been felt in the remains of the tooth, which were now extracted; the fangs had attached to them a portion of fungous growth.

The patient was desired to sponge the swelling with salt water, and to take steel medicines, which advice arose out of a belief that this effect of a tooth irritation takes place mostly in strumous subjects.

NOTE V.

SOME ANOMALIES OF STRANGULATED HERNIA, ENCOUNTERED IN OPERATION.

CASE I.

An Enterocele, with its sac contained in the sac of an Epiplocele. Behind these a Cystocele.

The sac of one rupture containing the sac of another is a very uncommon case, since one of our most distinguished writers on hernia, and most experienced of surgeons, never met with one. Faithful reports of such irregularities are valuable, by preparing the young surgeon for them when they do occur—in preventing confusion of his conduct, when all depends upon his coolness and knowledge.

On the night of the 4th of August, 1822, a young medical friend called me to his father, who had an old, and very large, scrotal, irreducible hernia, now become strangulated, with an increase of bulk, in which state it had been for some days.

Although in such cases there is no great urgency, yet this delay was probably sufficiently long, as the symptoms were unmitigated by the prudent measures which had been employed.

He vomited occasionally; nothing had passed his bowels of any consequence, and that little was probably from the portion of them below the obstruction:—there was hiccough now and then—the abdomen began to swell, and it was becoming tender upon pressure.

No further time was lost.

On opening the sac, which appeared thinner than could be expected in so aged a hernia, a mass of omentum was discovered, adherent to the generality of its surface by broad and firm bands, evidently of long standing. Some adhesions of a more tender structure connected the omentum, at the

upper portion of the sac, with a substance at the bottom of it, which had a form somewhat resembling a fold of intestine, but an external appearance very dissimilar; the polished lustre and demi-vascular character, on a near view, looking more like an investing membrane.

I was in doubt as to its nature. The stricture of the tendon upon the omentum was liberated.

A closer and more minute inspection showed the substance to have a dark chocolate colour, but lying so deep and obscured among the masses of adherent omentum, that it was a puzzling enquiry, especially by candle-light, to make out more than the probability of its being another, and an inner hernia, with its sac, enclosed in the one which had just been opened.

The surface was certainly not intestinal, and its very deep and shadowy tone of colour made me respect its tender connections with the omentum, at the neck of the sac, which would be of value in retaining the substance in its present situation, should there be occasion to cut a mortified intestine.

A few horizontal scratches with the scalpel, into this substance, were followed by a smart gush of water. Its nature was now, of course, ascertained, and by a careful cutting up of the sac, a large portion of intestine, of a deep brown colour, was discovered. It shone, however, too brilliantly to be dead, and was returned, after dividing the stricture which was in the *neck* of *the sac*, and some recent connections the bowel had formed with its upper portion.

But what was to be done with the enormous mass of omentum, adhering on every side to its sac by numerous, and almost continuous points of firm, long-standing bands of membranous substance?

Some of these bands, less firm than others, and probably of recent growth, were torn with the finger, and others dissected away. But I found, as the dissection approached the neck of the sac, that the task of destroying its union with its contents, with anything like precision or certainty, was hopeless, and would have been dangerous: no distinction of the one or the other could be made out; both were blended in one mass; and, in consequence, the omentum was left in the wound, with the exception of the detached portions. These were cut away as lumber, and several vessels were tied at the divided edges. The mass of substance left in the wound was still considerable.

Both herniæ were of long standing, the omental the oldest.

The young surgeon, (the son of the patient,) who was present, stated that his father had been able to return part of the protrusion for years past, which must have been intestine, as the remaining, and irreducible part, he was sure was omentum, from being often accustomed to its feel.

The wound was closed with sutures, and thirty drops of laudanum given him.

From the very doubtful condition of the gut, all opening medicine was forbidden, that it might not be disturbed in the process of adhesion to the upper opening of the ring. For the same reason very little liquid food was allowed. He recovered, without the supervention of any inflammatory symptoms.

It has been strongly recommended, by some highly distinguished writers on ruptures, and men of experience, not to expose the contents of the sac of a large and old irreducible hernia, which might become strangulated, from a fear of exciting inflammation in such an extensive surface by the necessary dissection and violence; which inflammation, by being continued into the belly, would probably destroy life; but to be content with a division of the stricture, by passing the knife under the tendon, on the outside of the sac.

Whatever may be the value of this advice generally, it is undeniable, that such practice, in the foregoing case, must have cost the patient his life, as the stricture in the inner hernia was formed by the neck of its sac, and must have been left untouched by the external liberation of the tendon only, without opening the tumour. This last step could only have released the omentum, the stricture upon which was the least important.

This gentleman called upon me a year or two after the operation, when he said, that the truss, with which he had been fitted, rested easily upon the ring, without giving pain to the soft bed of omentum in which it lay, but it did not quite keep back the intestine, part of which slipped down behind the pad into the scrotum: but, he added, it was very odd that it should always have disappeared whenever he made water. The observation struck me. On examination, there was a tumour in the upper part of the scrotum,

and as he had not lately made water, I begged him to do so, in my presence; in an instant the tumour was gone—it was a hernia of the bladder, which had passed from the pelvis, in consequence of the great relaxation of the parts, induced by the double hernia, which of course had preceded and caused it.

Mr. B. had in his own person, therefore, a curious assemblage of different herniæ, a triple rupture on one side; an enterocele, with its sac enclosed in the sac of an epiplocele, and behind these had descended the cystocele.

CASE II.

Strangulated Femoral Enterocele, with unusual adhesions of the Omentum, which prevented its return.

It was a fat female patient, who resided at Climperwell, in this county, and who had laboured under symptoms of strangulated hernia for three days when I saw her.

She was extremely weak, vomited stercoraceous matter incessantly, had no motion, with great pain at the stomach, and considerable tenderness of the abdomen. In the bend of the right groin was a tumour of an unusual shape for a hernia. It was more than five inches long, and extended from the inferior spine of the ilium, to the top of the thigh. Its greatest breadth was in the middle, where it might be nearly two inches wide, gradually tapering towards the extremities.

In cutting down to the sac, a prodigious thickness of fat was divided, and as the dissection was cautiously continued, a bit of this was touched which appeared rather whiter and harder than that previously cut. In fact it was a piece of the omentum, touched with the knife, which encountered no sac in front of the hernia, none at least was visible; probably it was so blended with the fat as not to be distinguished by the most careful examination.

With some trouble a finger was introduced into a cavity, and run up upon the face of a small portion of omentum.

Having exposed the long tumour within the sac, partially concealed by this omentum, it certainly had a singular appearance. It lay like the colon in size, of a whitish colour, and about five inches long; and yet, upon

close inspection, the fine ramifications of blood-vessels, which distinguish an intestine were not visible. At its upper extremity, near the ilium, it had adhered so strongly to the sac, as to require considerable force to separate the two parts.

At last, after a minute examination, it was sufficiently clear that this was a piece of intestine surrounded by omentum, which fitted it like a glove upon a finger, so closely as not to obscure the natural round and smooth character of intestine; in fact, upon tracing the omentum towards the inferior portion of the prolapsed part, I came upon the intestine, which was of a darker colour, nearly black, and contrasted strongly with the dirty white colour of the omentum, which was glued to it.

It was impossible to separate any point of the omentum from the intestine; the most delicate and careful dissection would have been unavailing. The prolapsed part was so tense and incompressible, that, apparently, the angle was very acute where the gut doubled. The femoral ligament, under which the rupture had passed, was cut. Not the least impression could even then be made upon its contents, which were probably air, and some effusion. The obstruction of the gut was, therefore, still entire.

Again and again, but in vain, was an opening sought for, by which I could make a beginning to clear the gut of its obstinate companion, that so closely and fatally embraced it. I carried my finger into the belly in all directions, for information—to tear asunder—but to no purpose.

The parts were left in the wound unreturned, after being well satisfied that no stricture from the ligament or sac acted upon them; though it was to be feared that those from the adhesions would continue to interrupt the passage through the doubled intestine.

On the following day the symptoms of strangulation remained the same—pain in the belly—vomiting and constipation—with the addition of great tenderness of the whole abdomen—a haggard and subdued expression of countenance—feeble pulse, and great prostration of strength.

Delay now would have been worse than trifling.

An incision was made, into the prolapsed part, of three inches long, and some fæces escaped, but so little, that it was probable that concealed adhesions interrupted, at some unknown point above, the circulation from the belly to the opening now made in the bowel.

Convinced that by removing all stricture upon this part, within reach, and opening it freely, so as to give an opportunity for the contents of the bowels to escape, (by the confinement of which the symptoms were sustained,) it was presumed that all was done that the present state of our knowledge would warrant, I took leave of the patient, with a painful conviction that I should see her, living, no more.

With some surprise a summons was received on the following day, to visit her as soon as possible.

All her bad symptoms were gone. More than three quarts of fæculent matter had passed away through the opening in the bowel.

She recovered, at the time, with an artificial anus. With any other subsequent circumstances of the case I am unacquainted. Her death occurred within twelve months after the operation, but from causes unknown to me.

Had it been possible, it would not have been good practice to have returned the intestine bound up in coils by such close and universal adhesions, which appeared when my finger passed through the inguinal canal, to be continued onwards beyond its reach into the abdomen. The air and secretions within the bowel, pent up by these adhesions, vastly increased the bulk of it, so that to have returned it would have been impossible, and if possible, imprudent. I can, however, conceive a case of some forms of adhesion, confined to the sac, and within sight, which prevent the return of the part after the liberation of the stricture, where pricking the intestine with a needle, and emptying it, with the chance of returning the part thus diminished in bulk, leaving the little openings towards the wound, would be preferable (though probably dangerous) to the certainty of saving life at the expence of a disgusting artificial anus.

CASE III.

Strangulated, irreducible, congenital Hernia, in which the Testicle was distinguishable externally. The Omentum removed.

A man from Painswick was admitted under my estimable predecessor with a scrotal hernia, of which the following history was given. That he

had a rupture in his infancy, which was cured, but that some years ago it returned, since which he had never been able to return it into the belly, but that the tumour always remained in the scrotum; that five days ago, in straining, a greater quantity of protrusion took place, to the extent of twice its former size; that he vomited, and had pain in his belly, which symptoms were relieved by opening medicine, and although easier, still there was pain and tenderness about the lower part of the belly near the ring.

The tumour was very large, rather long than round: at the bottom and posterior part of it the testis was plainly distinguishable. The whole tumour admitted of very rough handling without giving pain, except at the ring, where there was a substance like a small rope, hard, and tender to the touch. There was evidently a sense of fluctuation. The patient had now no pain or tenderness of the abdomen: the pulse was feeble and quick, although he walked about the ward as if nothing ailed him. A large dose, first of opium, and then of calomel was given, and purgative injections ordered. On the following day, no stools having been procured, it was repeated, without effect, and as tenderness and pain had returned over the abdomen, it was deemed necessary to operate, after a trial of the tobacco enema.

The operator had expressed his belief that the hernia was omental, from the mildness of the symptoms, and from its giving no pain in handling, except at its posterior part, where the tenderness of the testis announced its presence. He was right. It was an immense omental hernia in the tunica vaginalis, with the testis enveloped only in the tunica albuginea. There was some water in the tunica vaginalis.

The omentum was discoloured in many parts, and had an assemblage, in places, of hard, round lumps. Strong ropes of adhesion, as large as the little finger, bound it to the tunica vaginalis, and besides these, a large portion of the omentum was strangulated, by a ring of its own substance, low down in the cavity. Through this ring a large proportion of it had slipped, as in intus-susception. Higher up in the sac the adhesions were every-where strong, uniting it, by firm bands, to the omentum. All these were torn with the fingers, or cut with the knife. After searching, with the former, the inguinal canal, and freeing all within reach of it, the operator expressed his belief that the whole of the omentum had fallen out of the abdomen, as he could feel the margin of its connection, in the abdomen, with some intestine.

Portions, discoloured and indurated, were removed by the knife, and as the back part of the sac became exposed, a substance was discovered, looking like intestine. It was the spermatic cord, with its vessels very large and varicose. The operator now endeavoured to return the remainder of the intestine into the belly, but its bulk was still so great, that he failed in his attempt to pass it through the ring. Being unwilling, as he said, to enlarge the opening, that the patient might be better secured from the risk of a future descent, he now preferred cutting away the whole omentum, excepting, indeed, a very small portion of it, which slipped into the belly.

During the attempt to reduce the protruded part, the patient complained of severe pain. The wound was closed with stitches. On the following day there was pain in the belly, and some fever. The upper stitches were cut, and he took opening medicine, which acted. For many days his pulse was 120—he complained of some soreness and pain along the chord. When the wound had nearly closed he spoke of pain and tenderness also in the iliac region, and some swelling and hardness were certainly to be felt there, which disappeared altogether on his being leeched and purged. Discharged cured.

The case is interesting, from the testis being found so readily behind the protrusion, which writers on this subject say cannot be done—from the circumstance of the spermatic chord being enlarged as to look like intestine, which, to a young operator, might have been embarrassing—from the extraordinary strength, size, and extent of the bands of adhesion of the omentum, which last was cut from the sac—and from the very extensive dissection and rough usage of the parts not being followed by any considerable inflammation — of which this case is a second example. For it is very probable, that the pain and tenderness near the iliac region, some days subsequent to the operation, was from a piece of omentum in a state of inflammation from another cause; viz. — it regained the abdomen, with rather a large ligature placed, somewhat roughly, upon one of its divided vessels, and the end of which was left out of the wound.

CASE IV.

Peritonitis conjoined with Hernia, but not produced by it.

Henry Robbins, a stout young man, on the thirtieth of December received a kick from a horse, on the right side of the belly; he vomited soon after, and was in constant pain from the time he received the blow to the period when I saw him, which was on the third day. He was bled very largely, (the blood cupped and buffed) and sent to the Hospital. He had stools on the fourth day, on which day, the pain continuing, with occasional vomiting, tension, and tenderness of the abdomen, he was again bled.

On the sixth day his bowels acted well, under purgatives; he had occasional pain only, the tension was as much as ever, but he had not been sick. On this day it was observed that he had a scrotal hernia on the left side, the opposite one to the accident. This, he said, had been there for some time past, but that it disappeared when he lay down. The hernia was now incapable of reduction, and it became a question whether it was not the cause of all the symptoms, rather than the kick. I was called to a consultation.

The tumour was of considerable size. It had descended low in the scrotum, and had a tense feel, was uniformly smooth in its surface, which latter circumstance led me to suspect that it could not be omental. I delivered my opinion against the operation, and in favour of the symptoms being produced by inflammation from the blow, on the following grounds;

1. That the symptoms immediately followed the infliction of the blow.

2. That if the symptoms proceeded from strangulated hernia, the protrusion must be either omentum, or the side only of an intestine; it could not be a circle, because the continuity of the canal was uninterrupted; now the part had not the feel or character of omentum, whilst the size and length of the protrusion prohibited the notion that it was the side only of an intestine.

3. That the firm feel of the protruded part, and the slight tenderness which it possessed, might arise from the peritoneal inflammation, or the effect of the blow having induced the inflammation of the intestines; that this inflammation would naturally affect the portion of the intestine within the

sac, inducing a tense tumour, a degree of incarceration from the filling of the protruded part, and consequent tenderness, all of which would subside, when the belly subsided, by the removal of the inflammatory affections.

Finally, as the symptoms were, in some measure, subsiding, from the means already employed, that they should be continued rather than perform an operation to liberate the intestine, which might be unnecessary; and which, by the infliction of additional violence, would probably destroy the patient, should the existing peritoneal inflammation proceed from the blow of the horse.

From this day (the sixth) he continued to mend, he had no return of sickness, his belly subsided, his skin became cool, his bowels acted, and the tongue was moist. He had been bled and kept low.

On the fourteenth day I took the following note. "The patient is convalescent, the tumour is full and prominent, but it no longer offers its former firm and resisting surface. Upon a delicate handling it sinks, and all can plainly hear the gurgling of air passing into the abdomen. But I do not think the intestine returns to the belly, because, though the tumour has obviously diminished, yet a considerable swelling now remains. The diminution of size being the probable effect of the removal of the peritoneal inflammation and consequent stricture upon the gut, and which thus permits its contents to pass upwards into the belly."

"With the view of the case described, I can account for the intestine remaining, by supposing, that the peritoneal inflammation, the effect of the blow, had been propagated along that membrane, to the sac of the protruded intestine, between which an adhesion had taken place."

This man was discharged, apparently well; the hernia down; but returned to the Hospital on the 2nd of February, with his belly swollen, and acutely painful, at times, over its whole surface. At these times, air was felt moving (as he said) along his bowels. There was evidently a fluctuation to be distinguished in the peritoneum. He is now in perfect health, but the rupture still down, irreducibly, which was not the case before the accident.

CASE V.

Strangulated or obstructed scrotal Hernia, produced by an injury from the patient's watch.

A man, about fifty years of age, was brought to the Infirmary, with a strangulated scrotal hernia of four days' standing; his pulse was very low, his belly very tense, obstructed, and tender to the touch; he had hiccough, and a cold clammy sweat pervaded his body.

It was, indeed, an unfavourable case for an operation.

The tumour was not bigger than a small egg, and when the strangulation took place, (in falling,) it appeared that his watch was struck forcibly against it. Was it not the cause of the strangulation or obstruction of the bowels?

In dissecting down to the sac, the external investment of it and the sac itself were so agglutinated together, that no distinction of parts could be made out, and in cutting a portion of the sac upon the director, the intestine itself suffered, which was closely glued to the sac, and doubtless hung with it upon the point of the director.

From this unavoidable accident taking place, the opening in the gut was, justifiably, considerably enlarged, so as to allow of the escape of the contents of the bowels. The nature of the adhesion of the intestine with the sac was afterwards examined, and found so complete, that the head of the probe could not be insinuated between the two substances.

It was remarked that every touch of the knife, in dissecting down the sac, produced extraordinary bleeding, and doubtless this, as well as the remarkable adhesions between the sac and intestine, were produced by the blow of the watch.

He died the fourth day from the operation, and I should imagine from the effects of the inflammation on the powers of life, excited by the strangulation, or the blow, before the operation was performed.

All signs of inflammation passed away, as the contents of the abdomen flowed freely through the wound. He appeared to sink like a man exhausted.

It is probable, therefore, that an earlier puncture into the bowel (inca-

pable, from its adhesions, of being otherwise treated) would have saved life, at the expence of an artificial anus.

Or, had the influence of the blow upon the rupture been clearly made out as a probable cause of the strangulation or obstruction, by inducing an inflammatory action of the intestinal canal, and thus increasing the difficulty of the circulation through the hernia, either by the adhesion of the bowel to the sac, (which would limit its own action,) or by filling it with secretion, and thus, again, by increasing the bulk of the hernia, increasing also the difficulty of returning it into the belly;—it is not unlikely, that very early and vigorous means, local and general, employed to remove the inflammation, might have saved the patient by preventing its effects. But as the case stood at the time of the patient's admission, it was too late to employ these means, and nothing besides freeing the circulation of the bowels through the hernia, by some operation, could have had a chance of saving life. Had even the one actually practised, though not intended, been done earlier, the chance would have been still greater.

CASE VI.

Strangulated scrotal Hernia, with an encysted Hydrocele of the chord in front of it taken for the sac of the Hernia, with other anomalous circumstances.

After making his external incision very low on the tumour, the surgeon thought, after some dissection, that he had reached the sac, and accordingly opened it in a cautious manner, when his belief was confirmed by the escape of a considerable quantity of serum from the cavity. This was slit up extensively—its parietes were very thick.

The contents of this supposed sac appeared to be cœcum, for there lay, at the extremity of this last named resemblance, a part, which looked like the appendix vermiformis.

Insuperable difficulties, however, at the neck of this supposed sac, interrupted the regular progress of the operation—the hernia could not be returned—the operator divided the tendon, and quitted his patient.

Some time afterwards, in consequence of the symptoms of strangulation remaining in all their force, another examination was made of the parts concerned in the operation.

It was discovered that the substance which appeared to be the vermiform appendix of the cœcum, was the testis, with its vessels, very much dwindled in size, and which lay at the extremity of the hernial sac in such a way as to make it appear like the cœcum itself.

The hernial sac, therefore, was yet to be opened, which was accordingly done—the tendon cut again, and the hernia, which was a portion of the ilium, returned. The patient recovered.

The perplexing and irregular circumstances of the foregoing case arose out of the novelty of an encysted hydrocele of the chord being found in front of the hernia, without the chord itself occupying that situation. The hernia, in descending through the loose cellular membrane between the chord and the cremaster muscle, had condensed some watery cysts against the latter, in such a manner, that a complete encysted hydrocele was the result, containing about two table-spoonfuls of a serous fluid; the escape of which had deceived the operator into a belief that he had opened the true hernial sac.

The cremaster muscle, with the condensed cellular texture, formed a very thick and strong front to this watery tumour, which was moulded thinly by an old hernia over its own front, so as not to disturb its smooth convex character. This latter circumstance, together with the immobility of the whole tumour, composed, as it was, of two distinct parts, which it was impossible to distinguish from each other, left the operator without any other guide, than the knife, to ascertain the real composition of the mass. When the knife had penetrated the watery cyst, and the parts were further opened, he was still further misled, and confirmed in his belief, that he had entered the sac of the hernia, from seeing the dwindled testis and hernia lying together, in a condition to resemble the cœcum with its appendage.

The subsequent history of the case will, however, serve to shew the necessity of vigilance—of extreme care and deliberation in opening herniary tumours. To avoid confusion in making out the identity of parts, the natural ones ought first to be traced. Had the testis been sought for in the foregoing example, the enquiry must have led to its detection at the extremity of the protrusion, which then, in its turn, would have undergone a more rigorous examination, and its real character have been quickly developed.

NOTE VI.

ON FAILURES IN LITHOTOMY.

Lithontrity may, by being successful in the treatment of small calculi, diminish the frequency of lithotomy, but it will never supersede this operation altogether. Its difficulties, irregularities and failures, will, therefore, still be objects of interest, and worthy of collecting.

In performing the operation of lithotomy, it is, perhaps, too much the fashion to consider rapidity of execution as a leading excellence; but in our attempts to acquire this captivating dexterity, there is reason to fear that mischief is sometimes done—because hurried and showy movements are scarcely compatible with the gentleness and caution which are necessary to success.

The fatality of lithotomy cases recorded in the Journals, may, in a great degree, be ascribed to these attempts at brilliant practice; of counting the number of minutes Mr. ———, of great celebrity, takes, to perform this operation; a dangerous guide, for, without his constant practice, none can be equally rapid, with safety to the patient!

"That operation is done quick enough, which is well done," said one of the best surgeons of our days. If rapidity be to save pain, it fails in its object, for severity of suffering, from violence of the movements, is more than a balance for a more moderate degree longer continued.

The first incisions may indeed be as quick as the surgeon may please, but, when the membranous portion of the urethra is to be carefully cut, just before the prostrate gland, the gland itself, and the forceps—the too often terrible forceps—used, it is humbly conceived that the operator

should not be in a hurry; and this especially when he cuts with a knife a man with a fat, and a deep perineum. It is sufficiently difficult and inconvenient, in such a case, to manage, with precision, the movement of the knife, so that its cut shall be just what is wanted for room, and no more.

But, in a hurry, and taking for granted a great deal, viz. that you have made the prostratic opening sufficiently large, without your finger, at such a distance, being exactly able to demonstrate the fact—it will at last be discovered, in attempting to extract the stone, that room is yet wanting, and then the neck of the bladder receives a fresh assault—more violence is added,—the knife is resumed to touch and retouch,—till room enough be obtained.

To avoid this, in such a case of a deep perineum, the superiority of the gorget is manifest, if of the requisite breadth and length for the subject. It reaches its object—makes a clean cut at once—sufficient to allow of the passage of nineteen stones out of twenty, without further violence being necessary.

If the Journals give correct reports of the mode of operating by the most eminent of the profession; the principle of non-violence is either not allowed, or if allowed, not always acted upon. Nay, further; it is scarcely defended; for one of the most experienced and successful of lithotomists is quoted as a person who disregarded, as unnecessary, this principle altogether. To assist in doing away the lamentable and dangerous effects of such doctrine, the subsequent cases are chiefly recorded. For surely no fact is more unquestionable, none can be more important, or better worth remembering, than that it is to a rough, worrying, and violent method, that the greater number of failures, in this operation of lithotomy, are to be ascribed. The greater the violence, the sooner is the work of death accomplished. The nervous system, in some examples, shook to its foundation, will scarcely maintain its power over the frame sufficiently long to allow the sufferer to reach his bed.

He dies at once, withered by the stroke.

In others, this first danger being overcome, inflammation is excited in the peritoneum, bladder, or cellular membrane, between it and the rectum, and they perish soon of peritonitis, or more slowly through the irritative agency of suppuration.

If hospital surgeons, who do this operation most frequently, were to report the failures they have witnessed, and the circumstances which attended them, much might be done towards abbreviating the sufferings, and preserving the lives of patients. The history of failures is, perhaps, more valuable than that of successful cases. Dissection will trace the causes of death, with the errors committed, and point out how, in future, they can be avoided, so as to lead to more precision, and certainty of a successful termination. A broken down sufferer of many years, who has made up his mind to submit to a terrible operation, the climax of pain and punishment, relying on our skill, judgment, and humanity, for its being safely done, should be considered as a patient of the whole profession. He has placed life, his last and most precious stake in its hands; and every member, whose experience allows him an opportunity, should not hesitate to contribute his mite to its preservation, by recounting, as warnings, the failures that he has beheld.

It will be found that their main source is violence, generally, though not always from the forceps, on whose blade should be engraven the motto, "Gardez bien." This violence is often unnecessary, for it is better to cut, than to bruise or lacerate, in the extraction of large calculi; to cut the bladder again and again, than to tear it open. On this principle was derived the great success which attended the operations of that celebrated lithotomist, Klein.

That it is the forceps which is the great agent of destruction, in the larger number of cases, is clear, from looking carefully over the sizes of the stones extracted by the late Mr. Martineau. He encountered no very desperate cases,—he was thus as fortunate as he proved skilful.

Out of eighty-four cases, the two largest stones weighed each four ounces only, and one of these patients was lost. Why? Because the forceps had too much to do in the extraction. When the stones were small, which in his great experience was remarkably the case, the forceps had very little to do. Hence his extraordinary success, and the detection of the true source of destruction.

Mr. Martineau, therefore, could never be justly quoted as an authority for violence in lithotomy. He seldom had occasion, from the size of the stones, to employ it; but when he had, he lost his patients like other surgeons.

There are, however, other sources of injury besides the forceps. Such as I have seen, from that and other causes, with all the failures which have occurred within my observation, shall now be faithfully narrated.

CASE I.

Fatal abscess of the Pelvis, from a lacerated Bladder by the Forceps.

A Sexagenarian from the country, tall, and very little worn in constitution by the presence of a large stone, which he had carried some years in his bladder, came under my care to have it removed. It was my maiden operation, and I was surrounded by experienced friends. From repeated examinations made in the rectum, and by sounding, it was evident that the stone was beyond a common size, and preparations were made accordingly; the muscles were fairly and freely cut, and the prostate gland divided by a full sized gorget. The stone-breaker was at hand. It was not difficult to lay hold of such a stone; the difficulty was in bringing it through its narrow channel with safety to the patient. I made gentle efforts in the proper direction, put my finger upon it between the blades of the forceps, in the rectum, and this examination assured me that it would never pass, without more force and laceration than was consistent with the patient's safety, and with my notions of the mode in which this operation should be performed. In vain was the opening into the bladder enlarged by the bistoury, and a more powerful exertion made;—the stone would not pass.

I looked round for the stone-breaker, I begged that it might be handed to me. "My dear Sir," with a pinch on the elbow, "try again," was the reply on one side. I did so, reluctantly; another more powerful, though unsuccessful pull was the consequence, and again I entreated imploringly for the stone-breaker; "Nonsense, don't be afraid, I have used ten times more force than you now do," was the answer from another side, (it was true, but his patients rarely survived;) one effort more, indeed, succeeded in bringing forth the stone, which was of the mulberry kind, and weighing about five ounces and a quarter, and after the patient had been upon the table three quarters of an hour. The last adviser was not a little proud of so speedy a proof of the soundness of his advice,—but he should have waited the result.

The shock of the operation the hardy veteran sustained; its immediate danger passed away,—but he soon fell off, and ultimately sunk under irritative fever, at the end of the fifth week from the date of the operation.

The irritation was a large abscess in the cellular membrane, between the bladder and rectum, and which doubtless arose from the injury done to the prostate gland and neck of the bladder, which were in rags, or fringes, bedewed with pus. The result of the foregoing case was of service, though not to the patient. I became particularly cautious of committing the slightest violence beyond what was absolutely necessary, rather cutting even the bladder, than allowing of any force in extracting the stone from it; and the effect was, that the next nineteen operations were successful ones. The stone, in this case, was too large to be removed with certain safety, though there would have been more chance of success with less violence. We may call for, as was done in the foregoing case, and then look at stone-breakers,—but to use them is, perhaps, quite a different matter. Mr. Earle's is the best. The lithrontrite appears to be inadmissible, from its want of power over large stones.

CASE II.

Fatal Peritonitis from a lacerated Bladder.

My second, and ultimate loss, was a young man of twenty-two years of age, and who was a good subject for the operation, that is to say, that no tendency to organic disease could be detected in him.

The following note, taken after the operation, will explain enough of the circumstances for the present purpose.

"No man should cut for the stone when he is ill; the feeling of lassitude, weakness, and want of decision, will creep into the operation. A slight oversight in the design, or defect of vigour in the execution, are quite enough to give a fatal turn to its termination. To-day I was not sufficiently alert, the gorget was overlooked, it did not cut well close to the beak, nor was it broad enough for a large adult, so that the right side of the prostate was not completely divided. The muscles too, in the deep hollow between the ischium and anus, were not sufficiently or decidedly cut,

so that a straitened channel was left for the exit of the stone. Both these original errors were amended, though feebly and inefficiently,—illness was at the bottom of it,—the division of the right side of the prostate was completed, and the bridles of muscles touched with the knife. These subsequent corrections were not enough to prevent more violence being done than should be permitted in this operation. It was ten minutes before the stone was extracted; and though I have seen infinitely more rough exertion employed, without harm in the result, yet do I fear for this poor fellow."

The weight of the stone was four ounces.

This patient died of peritoneal inflammation five days after the operation, in spite of the most early attention, and vigorous means employed to subdue it.

The angle of the left division of the right side of the prostate gland was torn, proving that its division by the gorget had not been quite accomplished. Some pus occupied the cellular membrane in its neighbourhood, and the small intestines were glued together by active peritoneal inflammation, which pervaded the whole cavity of the abdomen.

This man, possibly, might have been saved, had the incision of the prostate and bladder been made more free for the passage of the stone, instead of wrenching it from its bed by the forceps; although, when stones arrive at a large size, there must be some doubt about the result, should the lateral operation be performed.

CASE III.

Immediate death from extraordinary violence in the use of the Forceps.

The spectator in an operation room must always feel more than the operator himself, who is busy with his work, and, indeed, who should see nothing else but that this is well done.

A healthy, middle-aged looking man walked into the operation room, with a cheerful, and somewhat of a bravado manner, to be cut for the stone. Without any assistance, he mounted the table, and offered his hands and feet to be tied, with the air and countenance of one entering the prize-ring, and whose mind had a full determination to win the fight or perish,

though the possibility of the last was not at all in his contemplation. Scarcely would he submit to have his eyes bandaged,—he appeared as if he wished to behold the whole of that process which was to restore him to health and to his family!

There are some operators,—or let us rather say there were,—who, with but little knowledge, can, by a talent of imitation, perform the mechanical movements of an operation with singular boldness, rapidity, and effect, provided they meet with no irregular or embarrassing circumstance to disturb this beautiful harmony. But, should any unexpected and frightful event suddenly break upon the view of the hitherto brilliant man, then, he becomes astounded,—and is all abroad at the very moment when complete knowledge of the subject, the most perfect self-command,—the entire understanding—are necessary to the poor patient's safety. It is then, too, the alarm and confusion commences; the requisite knowledge, and consequent coolness, are not at hand; desperate force is substituted for skill, and the patient is in the most imminent danger;—that is to say, in more danger from the operator himself, than from the disease which he attempts to remove.

In the present instance, the operator made his first incisions clean and correct; he reached the bladder, felt the stone, and, in a twinkling, introduced an immense pair of forceps into the passage. But there was evident difficulty or obstruction in their entrance to the bladder. Some more plunges were made with them,—still their room for action was evidently confined; at last, they griped the stone; but, from the wide separation of the handles, it was evident that the stone was either very large, or held in the forceps by its long axis.

"This is a very large stone, Doctor, it won't come without a great deal of force;" a great deal of force was immediately applied, (and that not in the best direction,) but to no purpose,—the stone would not pass. The operator rested; the patient was calm, and complained not! The labours of the former, (his strength being recruited,) now re-commenced with redoubled vigour, and an air which imported a dreadful determination to succeed. His right foot was placed, in preparation for this really awful struggle, against a chair, which was supported by a pupil;—the scene became animated, though horrible. The straining and creaking of the forceps, as they occasionally lifted the suffering wretch from the table, (they twice

pulled him off it,)—his wild, agonizing shrieks, and entreaties for forbearance, after continuing for nearly two hours, gradually became more faint, and sunk, at last, into a piteous moan,—and when the stone was shown to him it was doubtful whether he saw it, or was even conscious that a period had, at length, arrived to sufferings that never were exceeded in mortal man.

He expired in a few minutes after being carried to his bed. The body was not examined.

The operator was naturally a quick and clever man, with a great deal of tact; but he here met with a stone of more than five ounces in weight, without having previously made himself acquainted with the case by repeated examinations, which would have enabled him to plan his operation better, so as to meet the peculiar difficulties which a very large stone must create.

Upon looking at the gorget, I thought it certain, that it could not, from its small size, have completely divided the left side of the prostate, moreover, it cut only on one side, so that room was lost on the right side of this gland. The operator too, having seized the stone, appeared to be unwilling to part with it, fearing it would be difficult to find again; although he must have felt a stricture or binding upon it, which would require great force to overcome. He appeared to be mentally whispering to himself, "If I let it go I may not get hold of it again, and it shall come now it is in my power," and with this wrong understanding of the principles of this operation, the fatal pulling was continued.

This feeling of apprehension, of fear of losing the object of his anxiety, too often occupies the mind of the operator, especially in the case of a deep perineum, where the stone is at a great distance from the finger, and not easily felt or commanded by it. But no woman's fear can be more unreasonable, no surgeon's more ruinous,—for it leads to acts of desperate violence. The road to the bladder cannot be lost after the forceps has once entered its cavity, and the stone will be as easily seized a second or a third time as it was at first,—at least, it will be seized, by steady and gentle efforts.

If any considerable sense of stricture, therefore, should be felt at the prostatic opening, when the operator attempts delivery of the stone from

the bladder, he should desist from all violence, of a kind likely to bruise or tear—the stone should be relinquished, and an examination of the extent of the incision, already made, be carried into effect. These will then be enlarged, according to the circumstances, in those points where the stricture or bridling exists, or where the first incisions have been incomplete, or inadequate to the size of the stone.

After all, operators, in this difficult case of a large stone, are to be pitied,—it must either be extracted, or left behind,—the want of success is more the fault of the operation (when the lateral is chosen) than in a want of skill in the surgeon.

CASE IV.

Fatal case, from injuries to the Bladder, in attempting to extract the remnant of a stone.

This was a young man of eighteen years of age, who had for some years been suffering from a stone in the bladder, and having made up his mind to have it removed, placed himself under the care of a good operating surgeon for that purpose.

Nothing could be better than the style in which the operator reached the bladder, by his superficial and deep incisions; the prostate cut, (with the knife,) the forceps introduced, and the stone seized. Unluckily, it broke in the gripe of the instrument, and notwithstanding the means employed, which lasted for a very long period, the fragment of stone was left in the bladder.

A few days passed without developing any very bad symptoms, there were, indeed, some slight pains about his loins, and a little tenderness about the lower part of the abdomen, but not of a kind to require active treatment. Soon, however, irritative fever shewed itself,—he wasted, and died a fortnight after the operation. The difficulty of using the forceps, of catching hold of the stone, in this case, probably arose from a portion of the bladder having contracted upon it; for the forceps would seize the point of the stone repeatedly, and as frequently slip from its hold.

This contraction, however, did not subside, as it is said to do, after some time had elapsed, for the operation lasted nearly two hours without

this subsidence taking place, and that a spasmodic contraction alone held the stone thus firmly, is probable, from its being found loose at the bottom of the bladder after death.

The following is the report of the dissection given to me.

Sectio Cadaveris. "The intestines, liver, and the whole of the digestive organs, were in a healthy state. The right kidney was in a state of suppuration; the left contained fetid serum. The ureters were enlarged, their coats being much thickened, and highly vascular. The coats of the bladder were full half an inch thick. The internal part of it was everywhere covered with black fetid mucus, except the fundus, which appeared more healthy, but inflamed. A piece of stone was found in the lower and back part of the bladder. The prostate gland was hardly any thing else but a mass of fetid matter."

This young man unquestionably died from the long continued violence of the operation, in the attempt to extract the portion of stone. The condition of the prostate gland, the kidney and bladder, sufficiently proved the fact, that their injuries, by the production of a hectic or irritative fever, destroyed the patient. The operator was placed under trying circumstances,—to take the stone or leave it; choose which he would, there was mischief in his choice.

Perhaps, however, too much fear is entertained of leaving a fragment of stone in the bladder; but should not this yield to the greater and more rational fear of lacerating and contusing the prostate and bladder, by a violent operation of long continuance, in a vain attempt to extract it? Why not leave it there, when moderate and well directed exertions have failed to remove it?

We know that stones in the bladder have passed away safely through the external incisions repeatedly, many days after a fruitless operation to remove them; but, it is probable, a patient rarely escapes death, whose bladder and prostate have been at once bruised and torn by the forceps, or pinched and rubbed by them, during a long operation. We also know, from experience, that delaying the extraction of a stone, where it would have been highly dangerous to have attempted its immediate removal, has been purposely practised with safety.*

* See Covillard,—Observat. Med. Opin. Liv. 4, Collot. Trait sur la Lithot. p. 178.

Nothing can be more dangerous than rubbing, or perhaps pinching the bladder, for an hour or two, with the blades of the forceps. Leaving the stone to its chance of a natural exit, had we sufficient moral courage to do so, would be incomparably preferable to this treatment.

On the whole, therefore, and in a case similar to the foregoing, I should prefer relinquishing the fragment of stone, rather than continue a violent irritation in searching it out, or in vain attempts to pluck it from the spasmodic grasp of the bladder. There is an evil to be apprehended in both practices, but the least in that which requires the least violence. The spasm of the bladder, which holds the stone, may subside; and in such a case, the stone might be expected to offer itself at the external opening.

The spasm, indeed, is more likely to yield after the teazing of the bladder has been withdrawn, by a cessation of all further attempts. This was certainly the case in the foregoing example. As long as the excitement from the operation lasted, so did the spasm which held the stone. It is, indeed, a law of all spasmodic actions, that they last not long if their source be removed; and this would seem to be an additional argument for leaving a fragment of stone in the bladder, at least for a time, under the circumstances already described.

That the mucous lining of the bladder is prone to inflammation, to a degree that can not be sufficiently impressed upon the mind of the surgeon, is clear, from the following interesting case, which is an additional proof of the caution and gentleness required in the treatment of this viscus.

CASE V.

Death, from sounding for a Stone.

A very engaging little boy, of six years of age, was brought to a Hospital, with symptoms of stone in the bladder. He was sounded twice by the receiving surgeon, who satisfied himself, on both occasions, of the existence of a stone.

A day was fixed for removing it, and a large party of medical practitioners were assembled, to view the operation. The boy was placed in position, tied, and the sound introduced; but the operating surgeon could

not now feel the stone, although he took the proper motions with the instrument for that purpose. The boy's bladder was full of water, the penis having been closed, and abundance of milk and water drunk about an hour before the scene which was now passing. "Let me try," said the consulting surgeon; he did so, but very roughly, and for no short period of time, with no more success than the operating surgeon. Another and another then tried, in succession, but nobody could feel the stone,—and the whole assemblage of eight or ten visitors would have continued to hunt for the stone in this unfortunate boy's body, had not the operating surgeon very properly interposed, by saying, "stop, gentlemen, if you please; this is my patient, and I fear you will do his bladder no good by proceeding further to-day." He was right, though his decision came too late. The little boy was carried to bed, complaining that his belly ached, and from that bed he was doomed to rise no more. Peritoneal inflammation of a very active kind followed, and in spite of the utmost attention, and early vigorous treatment, he died, on the fourth day from the date of the sounding, asking piteously and affectionately, though without avail, for his far distant mother.

On examination of the body, it was found that the inner lining of the bladder was highly inflamed, spotted red every-where, and that its peritoneal covering, at the fundus, was glued to the intestines, which were, on all sides, inflamed, and smeared with lymph.

In addition to this melancholy illustration of the necessity of treating with caution and forbearance the human bladder, it teaches also another kind of practice than that which is common in our operation rooms.

If sounding for a stone is sufficient to kill the patient, without the operation of lithotomy itself being performed, it is clear, that sounding at all, immediately before the operation, is a bad practice, if continued beyond the period of a ready and immediate striking upon the stone. The movements of the sound in the bladder *must* irritate its mucous lining, nay, very possibly inflame it in some degree, and then comes the succeeding and more violent irritation of the operation itself; and who could wonder if, under such circumstances, fatal inflammation should follow? There can be no

question, therefore, that sounding or ascertaining the presence of a stone in the bladder, by the surgeon and consulting surgeon, should be an act performed many days before the operation itself is executed, and that this preliminary measure, to any considerable extent, should never be allowed on the same day with the final operation.

On the present occasion, a sharp dispute arose between the operating and the consulting surgeon, as to the propriety of cutting the patient, upon the strength of the fact, that a stone had been distinctly felt by the operating surgeon, some days before the one on which the operation was to be performed. "If," said the consulting surgeon, "it was there a few days before, it is there now." There could be no denying of this position, and yet the operating surgeon was right in refusing to cut this patient, without the consulting surgeon having satisfied himself also of the presence of a stone. In this particular case he was more than commonly right, in saving, by his firmness, the operation from the discredit of a failure, but more especially, the unfortunate child from great additional punishment in an useless and terrible operation; for, as the remark and advice of the consulting surgeon was given subsequent to the sounding, the operation itself would have been, probably, both cruel and unavailing.

CASE VI.

Death, from continued violence in seeking for a small stone, after the Bladder was opened.

A surgeon made his way very skilfully into the bladder of a little boy, in which a stone was distinctly felt, and he could, on the introduction of his finger, occasionally touch it. The forceps were introduced, with closed blades, and the point of the instrument every now and then would strike upon the stone, but when the blades were opened, and the surgeon endeavoured to grasp the stone, he found it constantly eluding their gripe, or slipping out of them. The operation continued in this way for nearly half an hour, the patient complaining greatly of how much he was hurt; but at length the forceps seized the stone securely, which was extracted with the utmost ease,—for its size was singularly small.

The boy was put to bed, struck heavily by the operation,—he was

cold, and somewhat torpid, with a very feeble pulse;—and from this state he never recovered, although cordials and opium were given to him.

There was some, but very slight, tenderness of the abdomen on the following day; the patient was bled, and took opening medicine, and, of course, treated for peritonitis,—but he died on the fourth day from the date of the operation.

On inspecting the body, no signs of inflammation could be detected in the bladder or peritoneum,—all was pale and healthy. The bladder was, indeed, thickened, but this must have been the work of times past.

That this boy perished from the effect of a long continued and worrying operation upon his nervous system is sufficiently clear from the dissection, and also from the circumstance that he never rallied, but remained cold, with the peculiar torpid and fatal heaviness upon him, which is seen when little children are sent into hospitals, with dreadful burns about the trunk of the body. The destruction of the power of the brain and nervous system, by the violence of the shock, is the cause of death in both instances.

There is much variety of opinion as to the propriety of bleeding after lithotomy. Some practise it, and strongly recommend that it should be had recourse to upon the detection of any tenderness about the abdomen, notwithstanding a feeble pulse. There was certainly tenderness in this case.

For my own part, and from experience it is stated, I should be slow of bleeding after lithotomy, whilst evidence of decided prostration of the nervous system remained, in the shape of languor, indifference to external objects, sleepiness, and diminished temperature, even should some tenderness be present.

Above all things, it is presumed, the surgeon should be cautious in bleeding children under these circumstances, and especially gentle in his treatment of them during operation. It is very true, that in lithotomy children do better than grown persons; more recover. But this is to be accounted for on the ground that the operation in them is comparatively nothing. The stone is always small, and the operation throughout is much easier and quicker to perform, and, therefore, the little patient has less to

endure. For the explanation of the greater success of lithotomy in children cannot be in their superior power of bearing suffering. Their irritability is greater, their nervous system sooner excited: and hence, in dentition, and in irritations within the alimentary canal, are we often obliged to witness the most distressing sufferings. It is probable that the majority of deaths from lithotomy, in young children, is from the blow inflicted on the nervous power by the necessary severity of the operation, and not from inflammatory actions set up by it.

In the second part of these sketches will be detailed some fatal cases, arising out of the irritability of children, especially from the application of blisters, and this will be done without any intention of supporting or advocating, by their publication, the practice of Mr. St. John Long, whose patients, however, were not children, though a certain impertinent noble lord has,—possibly from a highly culpable belief in their credulity,—most ungallantly bestowed that term upon them.

In the same part will be detailed a successful method the author employed to pass a stone from the bladder, of the size concerned in the foregoing case, without cutting, or forceps, but which could not consistently appear here, in the midst of a note devoted to failures.

CASE VII.

Death from Peritonitis, the effect of a lacerated Bladder from Violence in the Operation.

The two following cases are in the words of my predecessor, who, it is well known, was an excellent and a successful lithotomist.

"I operated, in lithotomy, on a tall, well made man, twenty-nine years of age, who had been upwards of two years suffering severely from the stone, but, though somewhat emaciated, and apparently of an irritable constitution, he appeared by no means an improper subject for the operation.

"In the introduction of the conductor I met with some resistance. I am not certain whether it was from my not having divided the muscles with sufficient freedom, and consequently the urethra close to the prostate gland, or from my pressing the beak of the conductor with too much force against the

groove of the convexity of the staff. However, I resumed my knife, and divided the urethra and a very small portion of the prostate, and then the conductor passed with ease. The stone was readily laid hold of by the forceps, *but the resistance was so great, that it was not without spending some time, and using much violence, that I could extract it.*

The man bled very profusely, immediately after the coming away of the stone. However, after his legs were untied, and his thighs brought together, the hemorrhage very much diminished, and he was sent to bed. He complained immediately of great pain just above the pelvis. After he was put to bed an opiate was given to him. A very little weeping of blood from the wounds was observed. An hour after I left him I sent my pupil to examine if it continued. He brought me word, that there was a continuance of the hemorrhage in an increased degree, and that the man was in great pain. I immediately went to him, and found him in the condition described. I perceived that the discharge, though thin, was not urinous, and, therefore, I concluded that it was chiefly the serum oozing from coagulating blood, and consequently that there was a considerable lodgment in the bladder. I gently dilated the wound, and had the mortification to find my opinion confirmed. I brought away a large quantity of coagulated blood. The poor man expressed a sense of great ease, but then the blood flowed most copiously through the external wound. I introduced my finger covered with lint, and took other alike ineffectual means to restrain the hemorrhage. Dr. Cheston was so obliging as to lend me his assistance. I tried a cannula covered with lint dipped in astringent liquids, and a variety of methods, with little or no benefit. The man lost an immense quantity of blood. At length we left the wound to itself, and applying a solution of sal ammonia cold over the belly, and over the wound, and rags wetted in the same to the hypogastrium and between the thighs, the hemorrhage was entirely suppressed. The pain, however, continued. It increased during the night. The next morning his belly was sore, and somewhat tense. He was immoderately thirsty. He was sick, and troubled with frequent and feeble eructations.

"He continued to grow worse and worse, and died on the fourth day.

"On dissection there was a *considerable laceration of the bladder*, in a variety of directions, though none of them extensive.

"It seemed that the hemorrhage was from the bladder, but this we could not fully ascertain. The peritoneum was generally inflamed, but there was no other unnatural appearance.

"I do not, upon a review of this case, see any thing which could have been done in addition to, or variation from the means used, unless it was that I should have made a more free wound in the muscles, *if I had been aware of the size of the stone.* For though the resistance was apparently altogether in this bladder, yet it is probable that the wound in that organ would have been sufficient, and the opening would have dilated, if I had, by a very free and large incision through the muscles, removed all support to resistance, which the bladder itself had given."

There can be no doubt of the original incisions being imperfect in this case, that room enough was not obtained by them to transmit the stone easily, and that the attempt to force a passage, lacerated the bladder, and produced fatal peritonitis.

The hemorrhage was great, but had no share in producing the death of the patient. On the contrary, it was a likely means of preventing or checking the growth of the peritoneal inflammation which followed; and that it did not accomplish this desirable event, furnishes an additional, and most powerful reason for our being constantly upon our guard to avoid violence, which may produce an inflammation, so often intractable, and quickly fatal. In the present case it was scarcely controlled by the loss of more than three pints of blood;—its undoubted origin was the violent working of the forceps.

The case has other points of interest, which the reader will readily discover and appreciate.

CASE VIII.

Case of Peritonitis from violence in operation; from which the patient partly recovered, though he ultimately perished of Abscess of the Pelvis and Kidney.

"I cut a boy of ten years old. He lost a good deal of blood in the operation, from a branch of the pudica. In the evening his pulse was frequent, but in other respects he was doing well. In the night he complain-

ed a little of his belly. The next morning, his pulse being frequent, and his belly somewhat tense, I took from him about eight ounces of blood;—by the time of his having lost it, his lips became pale, and he shewed signs of faintness, and soon after was a little sick, and a profuse sweat broke out. His pulse grew a great deal quicker, and smaller, and it is scarce credible how rapidly the peritoneal affection increased. Before the bleeding, he could bear his belly to be struck gently, or to be handled without pain. It was not much swollen; but within half an hour after the blood had been drawn, the abdominal region became universally very much swollen, tympanitic, and exquisitely sore to the touch. He appeared to be in a great deal of pain, and his countenance grew expressive of great distress. His pulse was uncommonly quick and feeble, probably at least 180. He had had no stool since the operation. His urine was freely discharged through the wound, and some had passed through the urethra.

"Clysters were given him, a blister was applied to the false ribs on one side, and a sinopism to the other. Warm fomentations of poppy heads, decoctions, and crude Sal Ammoniac. were used to his abdomen for an hour or two; but they seemed to do mischief, and to increase the pain and the swelling. Infus. Senn. cu. P. I. was given him, and afterwards some Ol. Ricin. after using the fomentations for two or three hours. Finding they afforded no relief, I changed them for Spt. Vin. Camph. cu. Tinct. Opii, applied cold, which seemed to lessen both the soreness and the pain. The next day he was better, the soreness of the abdomen was lessened.

The twenty-first day after the operation he died. In the course of seven or eight days he was very much amended, having natural stools, and a great part of the urine passing through the urethra. His abdomen being free from pain, but his pulse was always quick, his appetite did not return, he had generally upon him a thirst, and his tongue was in general whitish, nor had his abdomen a natural feel; so that it was pretty evident there was some latent mischief, though of what kind I could not tell; beside, he every day grew more and more emaciated. His nights, though not painful, were disturbed. The nurse observed that his water was often whitish.

"Upon opening his body, I found the bladder contracted to a very small size, so that its cavity would not have contained more than two or three spoonfuls of urine. It was nearly half an inch in thickness;—red

spots, as of inflammation, appeared here and there on its mucous coat, which, however, seemed in no place to be ulcerated.

"The wound which was made by the operation, and which, probably, had been somewhat increased in magnitude by ulceration, *(for the sides of the wound had sloughed,)* appeared to be larger than I expected, or intended it should have been; for the prostate gland was completely cut through, and the incision was continued quite through the neck of the bladder, the orifice of one of the seminal ducts was obliquely wounded, notwithstanding the great care which I took in directing my prostate knife.

"One kidney was very little altered from a natural state, its pelvis, however, and the beginning of the ureter, were very much enlarged. The other kidney was merely a leathery cyst, full of matter, but a great deal diminished from its natural size. In the neighbourhood of the bladder, the intestines were adherent one to the other, and appeared to be considerably inflamed. Upon tearing the adhesion through, the posterior part of the pelvis was found full of thin pus, probably there was a pint and a half of that fluid. The sacrum was even bared by its action, and the rectum was loosened from its attachment to it.

"*Remarks.* It is a good maxim for a surgeon, when he has lost a patient after an operation, always to suspect that, in performing it, he was guilty of some error or oversight. For if he persuades himself that he has done every-thing right, he is precluding himself from the very chance of improvement. Now, to criticise upon my own operation, I suspect that I made the wound with my knife too deep within the pelvis, by which means the peritoneum was too much exposed, and probably was bruised in the extraction of the stone; secondly, I suspect that I did not make my wound far enough in the urethra, that is towards the bulb, but that, if anything, I leaned too much towards Raw's method of cutting, instead of rigidly adhering to Cheselden's lateral method, as described by him, but more particularly by Bromfield.

"I rather think that in small subjects the neck of the bladder is completely divided, almost always, though in adults that is not the case, on account of the greater size of the prostate."

As in the former case, so it will be seen in this, that the great loss of blood did not prevent the occurrence of peritoneal inflammation, which was probably the effect of the rough use of the forceps; and this was evident by the sloughing condition of the wound into the bladder, or the points on which the instrument acted: or, to take the operator's own explanation, it was violence or bruising of some sort, unnecessarily bestowed, either by the knife, or in the extraction of the stone.

Nor was Mr. Trye an unlikely person to commit such sort of violence occasionally. A good operator generally; in lithotomy he was a master. But like many other operating surgeons of great eminence, distinguished by the splendour and success of their undertakings, his high qualities of boldness and decision—the offspring of a superior anatomical education—would sometimes run a little wild, and be mischievous. Knowing what he could do, he was now and then somewhat proud of his really fine talent, and gave his patient no quarter. In plain English, he was rough; and at times and seasons when roughness might well have been spared;—but, in his roughness, lay the stern proof of his uncommon excellence, as an operator,—a rare union of science, with a cool,—calm courage,—that was never known to flinch,—or be for a moment disturbed, by the most embarrassing circumstances of blood and difficulty.

The foregoing eight cases are the whole number of deaths (with the exception of one) which followed the operation of lithotomy, or attempts to perform it; and the whole that perished out of fifty-nine operations which have been performed within my knowledge. They all died from violence.

Whilst it is admitted that the success of the operation, in the number of lives saved by it, was greater than usual—yet it may be safely affirmed, that, with the exception of the first, and perhaps the third case, the entire loss of life arose from a violence that may be deemed unnecessary; which, with ease, coolness, and constant reference to the principles of the operation, might have been avoided, and the patients' lives saved.

It may so happen, indeed, that, in irritable subjects, the ordinary violence of a well conducted operation would be sufficient to excite some of those fatal affections which destroy life from lithotomy. But, amongst the

foregoing cases at least, there is no proof that such was the fact. Marks of unnecessary injury were visible in all which were examined, and which satisfactorily account for the death of the patients. But, to prove that excessive irritability of constitution, excited by a more gentle operation, was the cause of one or other of the destructive morbid affections which destroy life after it, it would be necessary to shew that no marks of excessive violence could be traced upon the parts by dissection.

There is one particular case in which the mark, or proof, is left only in the constitution. Circumstances will sometimes arise, which will unfortunately cause a protraction of the ordinary or necessary violence to be continued for a very long period.

Here the nervous power is exhausted by the long continued irritation; the patient never rallies, but, in a few days, drops, without a struggle, into the grave.

In the first case detailed, or that of a large stone, but where the openings by the knife were made very free, the violence used in extracting it cannot well be called unnecessary; for, unless there are certain means in the power of the surgeon to break the stone, (which is not the fact,) he must either pull it away by main force, or leave it in the bladder. The last is rarely done, if the surgeon's personal strength is sufficient to accomplish this deed of butchery. But such is human nature, that it is much to be feared the patient's safety is not enough considered amidst the desperate and excited feelings of the moment, which occupy the mind of the surgeon:—self-love and pride are awakened, and he will too often be eagerly thinking,—if he thinks at all,—of success, come how it will, rather than allow his reputation to be disgraced, by not obtaining possession of the stone.

This, in the refined language of modern times, would be called a moral weakness,—but perhaps there is an error in the term, could it be shewn that, at such a fearful period, the surgeon was quite master of his understanding.

But why, it is humbly enquired, is the lateral operation performed at all, where the stone has been ascertained to be above the safe size for extraction in that direction? It is surely any-thing but a scientific operation to force a rough stone, by such a route, as big as your fist, through an aperture, in a delicate and important part of the human body, only one inch wide!

But, if you have done this yourself?—True; and all I can plead is the

sanction of my betters, and the improbability, nay, impossibility of doing otherwise, in the lateral operation, with a stone—impenetrable—and nearly as hard as flint.

Upon the detection of a large stone, (and no man should undertake lithotomy without being previously acquainted with its probable size,) I would relinquish all thoughts of the lateral operation, for with our present knowledge, that mode allows of no certain method of disposing of such a stone. With all their disadvantages,—and they are such as will not admit of comparison with the lateral operation, when the stone is not very large,—I would prefer the recto-vesical, or median section, when it is of a great size. If the fears of fistulous remains, or injury of the seminal ducts, should make surgeons reject the first, the last method is free of such objections. The bladder is opened the shortest road, the wound admits of the greatest dilatation, being exactly in the centre of the outlet of the pelvis, and surrounded by soft parts only. As to the danger of wounding the seminal ducts by the first method, it is by no means an accident confined exclusively to the recto-vesical section, inasmuch as in Case VIII. of these notes, it will be seen that this important vessel was cut by a first-rate lithotomist, in performing the lateral operation. This last, however, in a general way, is probably superior to all other methods of cutting for a stone; but, in the particular case of a large stone, the median section, the last pointed out by Professor Vacca, is the one which would oppose the least obstruction to its passage, and where the operator could not be embarrassed, in the delivery of the stone, from having cut a large vessel, which, in this mode of operating, is altogether impossible;—and which circumstance is of great importance, and vastly in its favour,—for nothing can be conceived more embarrassing, among all the difficulties of lithotomy, than to encounter, at the same time, great hemorrhage and a very large stone.

The four following cases are not failures, though approaching that way; and they are, perhaps, sufficiently interesting in some other points to be recorded. The two first will further shew how prone the mucous lining of the bladder is to inflame from rough sounding, though accustomed, with impunity, to bear the irritation of the stone. They also furnish examples of a sacculated stone left in the bladder, of hemorrhage during and after operation, and of part of the bladder contracted round the stone.

CASE IX.

Case of Peritonitis, excited by long continued attempts to find the Stone with the staff before operation. Two stones; one sacculated,—a piece left in that situation safely.

Garret Ward, Infirmary. I performed lithotomy, February 19, 1817, upon —— Holliday, of Nailsworth, a man seventy-three years of age, but of good constitution. There was considerable difficulty in feeling the stone with the staff, and attempts were indiscreetly made by many surgeons who were present, for a considerable time,—so that a fear was expressed that injury might be done to the bladder.

There was nothing remarkable observed in the operation, excepting that besides a large stone, the bladder also contained a smaller one encysted. I felt it projecting immediately above the pubis, where it was evidently firmly fixed. A long pair of dressing forceps broke off the point in the attempt to extract it from its bed, and the remainder was left behind, which the nail of the fore-finger could plainly distinguish to be on a level with the sides of the cyst and the bladder.

No further attempts were made to dislodge this stone. The severity of the sounding, (which led to this decision,) was not forgotten. It was not desirable to add more irritation to what had been already endured, and the stone was permitted to remain undisturbed in its habitation.

In the night, after the operation, he had severe pain just above the pubis, where was likewise some swelling; his skin was rather hot,—the tongue somewhat furred. Pulse hard, and about 100. Thirty leeches were ordered to this part of the abdomen, and, when they ceased to bleed, cold rags were to be constantly applied.

In the evening, the pain was much diminished, and the swelling gone. No stools. Sulphate of magnesia every other hour, until the bowels should act. On the third morning, it was reported that he had vomited twice in the night: the belly was swollen more than before, very tender to the touch, and painful. Tongue furred, and pulse 111. He had taken two ounces of the sulphate, and had only one stool. Eighteen ounces of blood were taken from the arm, twelve leeches were applied to the abdomen. A purgative clyster was given: and when the leeches had ceased to bleed, a

blister was directed, to cover the whole of the lower portion of the abdomen. He was placed in the warm bath after the leeches dropped off; the bleeding was considerable.

In the evening, he had had ten stools; his belly was much less swollen, he had been vomiting twice, the pain and tenderness much diminished. His pulse, 78, was reduced to 45. Tongue still furred, brown, but not dry. A clyster, with a little infusion of senna and sixty drops of laudanum, was ordered. On the following morning (the sixth from the operation) the swelling and pain of the belly were nearly gone; he had been sick once,—had had five stools,—pulse 73,—slept four hours.

On the fifth day, in the evening, his pulse had risen to 88, and struck sharp and forcibly against the finger; his tongue was dry, and he was more restless, he had had one stool. Seventeen ounces of blood were taken from his arm, twelve leeches were applied to the epigastric region, where he confessed, upon a close cross examination, that he felt some pain and tenderness. I say cross examined, because it was clear he wished not to be bled any more. He was desired to take sulphate of magnesia every hour until he was purged.

On the sixth morning his pulse was softer, though nearly as frequent; his pain, he declared, was gone, he had had twelve stools; his belly was nowhere tender, tongue more moist.

For the first time, this old man's countenance began to wear rather a haggard look, but his eye was still bright, he spoke firmly, and with confidence that he should recover. He was right. Strength was regained slowly, and he was ultimately discharged cured.

The foregoing case may be interesting, from the extent of the means successfully employed to remove the peritonitis in so aged a person, and from a sacculated stone being left in the bladder with safety.

In four days he lost thirty-five ounces of blood, had fifty-four leeches, and was freely purged;—moreover, he endured great pain. But here was a calm, courageous, and somewhat indifferent state of feeling, and if danger was apprehended, little was cared about the result. The patient had not the irritable quickness, the varying and wearing hopes and fears of the sensitive mind, which sees danger in every change, and suffers death many times before its real approach. Had he possessed the latter character, his

chance of recovery would have been infinitely less; because the nervous power, which governs the frame, would have been exhausted by its own activity, and these vital actions which depend upon it would, in their turn, have ceased to be continued.

It is well, on this account, for the young practitioner to measure the moral, as well as the physical character of his patients, before he undertakes very decisive means. For as they are both mixed up together, to form what is called the constitution, this last can never be philosophically known without its component parts being somewhat made out; nor would the practitioner know how much it would bear, were he in ignorance of its true character.

I should not have dared to have taken such bold liberties with this old man's constitution, after it had endured a severe operation, had he possessed this quick, high temperament, sensibility, nervous irritability, or whatever it may be denominated, and which,—however it may be compounded of matter or of mind, and in whatever proportions,—feels every-thing, yields to every-thing, leads the body into all possible mischief, and which is rarely remedied, though frequently increased, by bleeding or other lowering means.

I have chosen to consider the peritonitis as the effect of the long continued and severe sounding previous to the operation, rather than of the latter itself, because there were no circumstances in it which indicated much violence or suffering.

Holliday was well when I last heard of him, and of course the sacculated stone had been in no way injurious. It is probable, that a calculus, thus closely confined in a sac of the bladder, does little harm there; and when above the pelvis, it is not even likely to congregate more sabulous matter about it. If all this be true, if its close imprisonment admits not of that dreadful rolling of a loose stone in the bottom of the bladder, which irritates, inflames, and thickens the organ, and wears out the patient with pain,—why is it thought necessary to ferret out the sacculated one with so much anxiety and positive mischievous violence.

CASE X.

Cystitis from sounding. Hemorrhage during Operation. Bladder full of stone. From the case book of Mr. R. Fletcher, Jun.

"Charles Pride, aged 50, was admitted into the Gloucester Infirmary, with the usual symptoms of stone in the bladder, and, upon being sounded, a stone was discovered. His bladder was so exceedingly irritable, that each time after sounding, which was twice done, he complained of great pain in the lower part of his belly, with tenderness of it, and vomited repeatedly, and his urine deposited an unusual quantity of mucus: so far did this go, that both times he was obliged to be freely leeched, put in the warm bath, and purged. On account of this great inflammatory irritability of bladder, Mr. F. did not think it right to encourage him with much hope from an operation; but, at the patient's own request, he performed it. After cutting into the bladder, Mr. F. discovered with his finger, that there were two very large stones in it. There appeared to be no room for the forceps, and, from the size of the stones, it was deemed necessary to enlarge the opening in the bladder more than is usually done. Luckily, both the stones broke under the forceps, and were extracted by means of that instrument and the scoop, in somewhat less than half an hour. Their weight was about six ounces.

One other circumstance may be noted in this operation; the transverse perineal artery bled so profusely, that, from the size of the stream, it might have been mistaken for the pudic itself. It must have bled nearly a quart during the operation. It was tied, but, being in the track of the operation, the ligature soon slipped off, and the operation was continued without regarding it. From this cause, and the length of the operation, the man became low, and cold, and required some brandy. During that evening he was comfortable. Early the next morning he began to vomit high-coloured green matter, but was in no pain, except what was occasioned by straining to vomit, in the lower part of his belly, and wound. His bowels not being open, he was ordered a powder of Pulv. Rhei, gr. viij. and Pulv. Zingib. gr. v. with an effervescing draught. On seeing him in the afternoon, it appeared that he had thrown up the powder, and could keep nothing on his stomach; another was ordered, but that he also rejected. An

enema of Magnes. Sulph. and gruel was then administered, but it returned without any fæces; several others were given him, but with the same want of effect. Pulse this day about 120, and feeble; tongue furred and white.

In the evening he complained of slight pain in the bottom of his belly, with slight tenderness. Twenty leeches to be applied to the part. He was very much depressed, and said he felt convinced he should not live till morning. In the morning it was discovered that the nurse had not applied the leeches, in consequence of the patient expressing a dislike to them. He had vomited greatly during the night. The leeches were applied directly, but did not draw much blood. A Croton Oil pill was then given him, his bowels not having acted; this also he threw up;—pulse uncommonly quick, and very feeble,—tongue brown. In the afternoon his pulse was imperceptible;—Mr. F. ordered brandy to be given in small and repeated doses. In the evening his pulse gradually rose, and in the course of the night he had stools. He recovered.

Mr. F. considers the brandy to have saved him, by maintaining the powers of life until the bowels acted."

But for the brandy, given freely, he must have gone; so low was he brought in the first instance by the profuse hemorrhage, and the long continued teazing operation of extracting such a large mass of broken stones, and afterwards by the constant vomiting which succeeded the operation. But the hemorrhage might have saved him from the dangers of inflamed bladder and peritoneum, for the former was remarkably prone to inflame from the mere irritation of gentle sounding.

CASE XI.

Second Operation for stone on the foregoing patient. A portion of the Bladder contracted around the stone above the pubes.

Samuel Pride returned to the hospital, after his former discharge and recovery from the foregoing operation, with more stone formed in his bladder. He was repeatedly sounded, and a calculus demonstrated to be there; but no cystitis followed this preliminary operation, as was the case before

the first operation of lithotomy, nor was the stomach disturbed by it, which was remarkably the case on the former occasion.

The operation was now performed a second time, and no difficulties experienced in the early stage of it. The muscles and prostate were freely divided, and the stone was just touched with the tip of the fore-finger,—deep,—but very high, and above the pubes. The discovery of its situation was not made very readily, and then the forceps could not dislodge it,—for it was evidently grasped or enclosed by some fold of the bladder. A little suspension of all earnest efforts was allowed, with a hope that the contraction might cease, employing the time in very gentle efforts of the forceps, to catch the stone between their blades, but in vain,—they constantly slipped over a small portion of its surface. The contraction around the stone did not relax—the stone retained its situation.

Determined to use no violence, and to cease all further annoyance of the bladder with the forceps, they were thrown aside. With the tip of the fore-finger of my left hand as a guide, the handle of the scoop was conducted to the lodging of the stone. By greatly depressing the handle, the extreme point of it was inserted over the calculus, and with a few gentle efforts,—exactly after the sweeping or curved manner of the vectis working under the pubes, upon the occiput of the child, in delivery,—the stone was turned out of its enclosed or sacculated position, and fell to the bottom of the bladder, whence it was easily removed on a second introduction of the forceps.

The bladder was well cleared by the syringe in both operations. Discharged cured.

Where, as in the foregoing case, a stone lodged above the pubes does not come readily with the forceps, straight or crooked,—the attempts with them should be discontinued, and some other contrivance adopted to dislodge the calculus, with the least possible violence to the bladder. Any slightly curved instrument, with a rounded edge and point, and of sufficient length,—which could be passed over the stone and beyond it,—would probably have the power of throwing it down to the bottom of the bladder, when the forceps might be safely resumed.

At this time,—sixteen months after the last operation,—Pride has again symptoms of a stone.

CASE XII.

Hemorrhage during and after Operation.

Infirmary, April 14, 1818. In operating upon a healthy young man, the stone broke under the first gripe of the forceps. Half an hour was occupied in extracting the pieces, which was done as gently as possible, sometimes using the forceps, and then the scoop. During the whole period a conderable hemorrhage was going on, and when the removal of the stone was accomplished, I looked after the vessel. It lay deep under the pubes, and certainly was of considerable size, as it bled rather profusely. Though it was apparently too deep for the perineal artery, yet it could not be the pudic itself, for the blood gushed from a point directly under the arch of the pubes, and of course far from the ischium.

A large rectum bougie covered with oiled lint, held by an assistant, suppressed the bleeding. Seven hours after the operation, a rush of water forced out the instrument, which, it appears, was held improperly and slightly; the hemorrhage returned, and he lost, in a few minutes, about half-a-pint of blood. The instrument was replaced. It was removed on the third day, and nothing particular occurred until Sunday morning early, (sixth day from the operation,) when a profuse hemorrhage took place, by which the patient lost perhaps three pints of blood;—it ran through the bed, and the sheets and bedding were soaked in it. The instrument was again replaced, and well supported in its position, but was removed ultimately on Monday, the following day, the man complaining of exquisite soreness in the part. No further return of the hemorrhage followed, and he was discharged cured.

CASE XIII.

Example of an irritable bladder, ascertained by the effects of sounding upon it; increased by rather more violence in operating than should have been allowed;—the result,—abscesses in all possible directions.

Case drawn by the Hospital pupil, C. P.

"Charles Mathews, aged twelve years, admitted May 23rd, 1822, has been subject for many years to pains across the lower part of his abdomen, at the end of the penis before and immediately after making water, which will sometimes stop suddenly. There is a thick deposit of mucus in the bottom of the vessel into which he voids his urine, which is often tinged

with blood. On the twenty-fifth, he passed a small stone about the size of a pea, which he threw away without having shewn it to any person. (Mr. F. endeavoured to sound him on the day of his admission, but found some impediment.) The stone, he says, was of a brownish colour. For two days after this he continued tolerably free from pain, though not entirely; his water was also clearer, and he seldom experienced a sudden stopping of the stream whilst making it. The symptoms gradually returned; the water too deposited a thick sediment as before.

June 4th. Mr. F. to-day passed a small sound, and distinctly (as did several of the bystanders,) felt a stone. No violence was used. During the evening of this day he was in considerable pain, attended with some tenderness of the belly.

5th. This morning the sediment was considerable at the bottom of the pot, and streaked with blood. The boy appears of a very irritable habit generally, like his bladder; it was with the utmost difficulty that the sound could be passed, on account of his violent struggles. Mr. F. expresses himself unwilling to undertake the operation, in consequence of the great irritability of the bladder, and the bloody discharge continued since the sounding.

7th. He has continued much the same, suffering greatly at times. He thinks he makes water at least twenty times during the twenty-four hours.

July 3rd. The sounding has been again repeated, and the same severe symptoms have followed. The performance of the operation has been again deferred in consequence.

15th. The patient having lost the additional symptoms from the sounding, the operation was this day performed, after a declaration from Mr. F. that it was not a promising case.

The transversalis perinæi was tied, in consequence of rather more than usual hemorrhage. The opening into the bladder was made by the gorget, but upon grasping the stone with the forceps, it was found that the opening was scarcely large enough to admit of its passage, but some violence, though little, was exerted, when this difficulty was overcome, and the stone extracted. It was of considerable size, of a soft, white, gritty nature, simi-

lar to sand-stone, and possessed a volatile effluvia. Cap. Tinct. Opii, g. xxx. 12 A. M.—tolerably free from pain, except a slight smarting at the wound. Pulse rather full. 3 P. M.—patient asleep. 5 P. M.—said he was quite free from pain. The urine has passed freely through the wound. Pulse rather frequent.

16th. 10 A. M.—slept at intervals of about half an hour during the night, awakened by the passage of the water through the wound. 17th. Pulse increased in size and frequency, skin hot and dry, tongue slightly brown, mouth parched, slight tenderness upon pressure on the lower part of the abdomen; relieved by fomentations;—cap. Ol. Ricin. ½oz.—repeated during the evening, the first dose not having the desired effect. Free from pain all night, pulse slower, still thirsty.

18th. Is in much pain, there is tenderness about the abdomen, pulse quick—tongue very white—skin hot and dry—has had three stools, produced by a dose of castor oil during the day. Ordered a warm bath. In the afternoon the pulse was slower, and the tenderness and pain about the abdomen relieved.

19th. Free from pain, full and quick pulse, tongue cleaner.

21st. Clay-coloured stools, other symptoms as yesterday.

24th. Rather better, appetite improved.

25th. Passed some water through the natural canal for the first time, to-day.

August 2nd. He has rigours, his appetite is gone.

5th. In a very weak state, and rather feverish,—wound discharges very freely, and somewhat suddenly.

12th. Wound discharges profusely; Mr. F. said an abscess had burst: looses flesh very fast.

19th. Better,—upon pressure of the belly matter flows out largely through the wound, and apparently through the anus.

July 20th, 1823. Several collections of matter have taken place, and burst externally in several places in the region of the bladder, above the pubes, previously to Sept. 31, 1822. He has had, through the winter, a slight, short cough; no expectoration accompanied it. His appetite and general health were for a time bad, but are now much improved, and the

discharge from the wound, made by the operation, very small; though the urine has passed through the external wounds occasionally, above the pubes, where the abscesses burst, in three points, and where it causes a slight smarting pain. Discharged cured."

The foregoing cases may assist in warning us generally against violence, and particularly from a rough treatment of the bladder, whether practised in the preliminary act of sounding for a stone, or in the operation of extracting it,—that a gentle method is especially necessary in young children, as they bear not severe injuries with impunity,—that an over-anxiety to possess a fragment of a stone, or an entire one sacculated, either temporally or permanently, leads to irreparable mischief,—that above the pubes a stone may reside with safety, and without inconvenience, in a sacculated or motionless state:—and, finally, to avoid the imminent dangers of a large stone, in the lateral operation, the surgeon should make it an invariable rule to ascertain its size before operation, that a judgment might be formed as to the necessity of the high one above the pubes, or the median section below their arch.

The danger from hemorrhage can hardly be very great, since a fatal case was never known to happen in the whole course of my observation. One, however, whose experience has been far greater than mine, says that he has known patients lost repeatedly from that cause. Whenever it does happen that hemorrhage from lithotomy destroys life,—a fact to be granted upon the report of such undeniable authority,—this unfortunate occurrence must arise from the knife or gorget acting too near the ramus ischii, an error which a surgeon of cool tact and experience would hardly allow himself to commit. A movement of the handle of the staff, towards the left groin, will carry the curve of the instrument, with the prostate, somewhat further from the ramus of the left ischium; and now if the gorget, (by far the safest instrument, for it cuts with precision,) is impelled forwards, with its edge inclined obliquely outwards, and downwards, the pudic artery itself is as safe as its neighbour on the opposite side the road.

Should the size of the calculus be not so very great as to forbid the operation below the arch of the pubes, (a circumstance itself of very rare occurrence,) and all the necessary circumstances and rules are observed by an perienced lithotomist,—especially those concerning gentleness in execution,—cutting for the stone, in cases proper for the operation, is probably as safe to the patient, as a common amputation of the lower extremity.

With regard to the modern practice of destroying the calculus, of boring, splitting, and hammering it to pieces in its soft and tender residence,—time only can discover the real value of the measure. On a first view,—it must be admitted that first views are frequently erroneous,—and on reading some of the foregoing cases, the reader may probably conclude, that if it were possible to select another spot, he would not choose the human bladder as a desirable situation for the operation of stone-breaking. They show that the mere irritation of a sound,—and of the closed forceps, in searching for a stone in the bladder, is sufficient to excite fatal inflammation in that organ,—and, in cases where no evidence existed of previous disease in the bladder or prostate gland, which would have pre-disposed those parts to fatal disorganization, under ordinary operating circumstances. Of course the work of death was effected by the irritation of the instruments employed in lithotomy. Will the lithrontritic instruments, under similar circumstances, prove less irritating? Three cases out of seven, in one gentleman's practice, perished from inflammation of the bladder excited by them. Picked cases, paraded even before our best surgeons, do not furnish, either in kind or degree, the evidence necessary to decide upon the merits of lithontrity, and how far this innovation is likely to supplant or supersede the ancient and successful practice of lithotomy. Great and unbiassed experience of the most unquestionable kind,—faithful and honest narration of facts, pleasant or unpleasant,—of successes and *failures*, fairly intermingled alike,—with a love of truth,—can only decide the question. Evidence too, selected or not selected, should be taken with great caution, when proceeding from interested sources. Lithontrity is chiefly in the hands of those who either get their bread by it, or wish to do so; and it is too much to expect that nature should be the first to cry out against the gratification of her first wants. There is enough of evidence, however, to shew that the new operation bids fair to become a valuable auxiliary, if not a principal, in the treatment of calculi in the bladder; but the proper persons to mark the boundary of its merits, are those who get their bread from other sources. Surgeons generally, and especially hospital surgeons, whose operating habits, and greater experience in calculous affections, especially fit them for the important office of umpires, should no longer hesitate; for it is unquestionably both a matter of surprise and regret, that, up to this moment, not one case of lithontrity has been performed by a British surgeon, in a British hospital.

NOTE VII.

Dilatation, or Aneurism of the Posterior Aural Artery, accompanied with severe neuralgic symptoms. Cured by Operation

Hester Chambers, aged thirty-four years, was admitted into the General Hospital here, on account of an ulceration behind the left ear, attended with a most excruciating pain of the head, and the left side of the throat and neck; likewise with very great pain in swallowing. These pains had much of the neuralgic character, followed the course of the nerves, were periodical in violence, though seldom entirely absent.

There was a small tumour, apparently of the skin, about the size of half a very large nutmeg, seated an inch and a half obliquely above the mastoid process on the affected side, the projecting surface of which was ulcerated, and the ulceration extended a little farther than its basis: it had been of near seven years standing, and was accustomed now and then to bleed freely from its surface, and once it discharged, she said, nearly half-a-pint of blood. For three months before her admission to the Hospital it had not bled; and since the bleeding had ceased, the pains of the head and neck had come on, which at first were confined to one side of the head only, but afterwards were extended very generally over its surface.

Medicines, bleeding, both topical and general, blisters, &c., had been tried for her relief, with little or no benefit. The ulceration of the tumour and integument were healed, but the pain nevertheless continued, or even increased in violence. She had applied to several practitioners, and had been told her complaint was a cancer.

Upon examining the neighbourhood of the little tumour behind the ear very minutely, a small oblong and soft swelling was observed, which

was continued from the base of the tumour, and which distinctly pulsated. After repeated examinations it was clear that there was an aneurism, or dilatation of a small branch of the occipital artery which runs up behind the ear; and though it was not so clear how this should occasion the woman's sufferings, yet it was obvious that the tumour and the pains were connected, and it was, therefore, resolved to tie up the dilated artery. By making one pressure at the lower edge of the mastoid process, and another about an inch and a half higher up on the scalp, the woman's sufferings were instantly suspended. The artery was laid bare between these two points, and at each of them a ligature was passed underneath it,—the needle carried close to the bone, and a strong ligature made. The artery cut into was found to be dilated to the size of a goose-quill, as it quitted the tumour. The woman instantly lost all her pain, and could immediately swallow with ease.

About a month after the operation she was discharged, perfectly well.

Hester Chambers returned to the hospital on the 26th of June, thirteen months after her former discharge. For the last ten weeks she had again suffered a violent pain in the same side of the head which had been formerly affected; it did not, however, now extend towards the neck or lower part of the cranium, but from a spot two or three fingers' breadth above the point where the incision in the former operation commenced; it then extended obliquely upwards, towards the vertex, and there the pain became constant and most severe. No enlargement of any vessel, in the neighbourhood of the pained part, could be discovered. Pressure, however, applied a little above the seat of the pain, instantly suspended all her sufferings.

It was now determined to make an incision, though there was no perceptible aneurism or varix. On Monday, June 29th, this was done. The incision, two or three inches in length, was made across the part, where pressure being applied suspended the pain. This was continued through the integuments, and part of the fascia of the temporal muscle, which lay underneath the incised scalp. An artery of the scalp bled freely. After allowing the bleeding to continue for some time, it was suppressed by a button of lint. The moment the incision had been made, the pain left her

entirely. In the evening, soon after the operation, an internal head-ache came on, with a sense of violent burning all over the head, especially in front of it. Her pulse was slow and weak, tongue excessively dry and brown, and she was extremely giddy and thirsty. Some fever medicines were ordered, and a blister.

30th. Eleven, A. M.—tongue moister, but much furred.

July 1st. Complains still the same; is, however, less thirsty. Now and then she has catchings of the neck and arms. Nine, P. M.—excepting that her tongue is moister, she is as ill as ever, and complains of an increased burning heat all over her head, but has not the least return or remains of the original pain. Cold applications to the head.

The head felt hotter to the touch than the other parts of the body. The day after the operation, the edges of the wound looked very pale, and there was no appearance of inflammation or swelling.

2nd. Rather easier, though some pain still continuing.—Blisters to the temples, with James's powders every night.

9th. She has been mending; the appetite is pretty good; her thirst is less; but she complains still of some pain of the head.

10th. Since the last note leeches have been repeatedly applied to the head, with some relief. She has lost the pain in the part where the late incision was made—but it has returned with still increased violence near the spot where the first incision was made and the ligatures passed round the vessel which was enlarged. It has not been mentioned, (though it may be worthy of notice,) that after the last operation, a degree of deafness came on, with the other nervous affections above described. Pressure upon the part now attacked, as in the former instance, suspends the patient's sufferings, but the moment it is removed, the pain returns. No unnatural state of the integuments or deeper seated parts can be detected, either by the sight, or the touch.

She described her pain as accompanied with a burning heat, very intense, in a spot of about two fingers in breadth, and extending from the mastoid process for about three inches upwards, though with less severity, to the top of her head; and penetrating in depth, as she said, "to her very brains."

It seemed highly probable, in this case, that there was a morbid affection of some nerve; and it was conjectured that it must have its seat in the portio dura of the seventh pair. Sometimes her pulse was frequent, but it was always small. No treatment was of service. She remained in the house till the latter end of December, when she was advised to return to the use of leeches, and to apply them to the parts frequently. This was done, but without relief.

The woman at length begged that some operation might be performed by way of attempting her cure, her sufferings being dreadful; and one was executed, from the experience of the relief she had found from the former operations. It was determined, not only to make an incision, but to remove a portion of scalp and pericranium, to scrape the skull with a rugine, and make perforations in it; not indeed through the substance of the bone, but perhaps as far as the diplöe.

On the twenty-third of January this operation was performed. The scalp was removed for the space of three inches in length,—beginning at the mastoid process, and going upwards,—and half an inch, or an inch, in breadth. The cranium was bored with a terebra, to produce, if possible, exfoliation and granulations.

All her pain left her immediately,—but in the evening, noises in the head, giddiness, deafness, and other symptoms which have been described as succeeding the last operation, took place, though in a slight degree.

Leeches were repeatedly applied to the mastoid process. The pain in her head soon left her, and returned no more in the part which had lately been the seat of it; but, before the wound was healed, the pain became violent, and in a line close to the posterior and inferior boundary of the mastoid process.

March 20th. A deep incision was made, about two inches in length, on the lowermost edge of the mastoid process,—beginning from that point, and carrying it backward,—going so deep as to cut some of the fibres of the trapezius. The pain instantly ceased; but a singing in the ear, ear-ache, together with some of the former symptoms, returned in a slight degree.

April 9th. She was discharged, perfectly cured.

May 5th. This young woman remains well, but she has no sensibility in the greater part of the scalp on the affected side of the head.

It is abundantly clear, that the first operation in the foregoing case succeeded in curing the disease of the artery, which apparently consisted of a tumour, produced, in a great degree, by a simple enlargement or dilatation of its sides.

This vessel probably had given way, and admitted some blood to pass into the cellular membrane, between it and the skin. At this time doubtless it was that the profuse hemorrhage took place, and to it may also be ascribed the origin of the bloody looking warty excrescence on the outside of the dilated artery.

There might have been a congeries of cells, forming this excrescence, and in communication with the vessel, in the manner described by the late Mr. John Bell. Although the exact nature of the disease itself may not have been correctly described by that gentleman, yet the term is correct, for the tumour may be, and frequently is, sustained by anastamosis.

The success of the practice in the foregoing case is a proof of the principle being good on which it was founded,—viz. starving the disease, or intercepting the current of blood into it, by ligatures applied close to the bloody tumour, or enlarged artery, at both extremities; for unless they are so applied, on the immerging and emerging vessel or vessels, there will be room for collaterals to reach the disease, between it and the single ligature, and thus sustain the tumour and promote its growth, which it is well known that the free anastamoses of the scalp are remarkably capable of doing.

Even when the principal trunks have been secured, at both ends, or on all sides of the tumour, a vagrant vessel or two may creep in between the ligatures, and in time prevent success, by carrying blood enough to renew the pulsation and the disease.

To prevent this, all that art would seem capable of effecting in such a case, where the vascular tumour, aneurism by anastamosis, or active nævus has had its main trunk or trunks secured, would be to endeavour to produce the adhesive or obliterating process in the remaining disease, which, already deprived of its strength, or dangerous arterial violence, by ligature, would the more readily yield to secondary measures.

Excision itself would be safer, within the ligatures, now that the wild and dangerous throb of the disease had been subdued. But it is not always desirable to employ it;—the deformity and pain are objections. Neither is

it probable that, on the side of the head, it would be always neccessary to cut out bloody tumours, whose pulsation or active character had either been stopped, or greatly subdued, by ligatures on the surrounding trunks. For, from what I have seen of the treatment of nævi, (the more feeble character of which resembles the aneurism by anastamosis, or throbbing bloody tumour, when this last has been deprived of its vigour by ligatures, perhaps a mere thrill only being left,) it is probable that well directed pressure upon a bony surface, would be capable of effecting the obliterating process upon the remnant of the disease. Of the mode of applying this pressure see the note Nævus.

In very large pulsating tumours on the side of the head, with numerous trunks, the difficulty of securing them all would be great, and almost insurmountable; but an attempt, perhaps, would be preferable to the risk of tying the common carotid; a measure always accompanied by some risk, and which, it is now well known, does not always succeed in depriving the tumour of blood, though it appears to be capable of controlling the violence of the current through it.

The experience of some recent fatal cases will probably induce more caution and deliberation, before this vessel is taken up on the score of every pulsating tumour of the head. Between the ligature and the disease, the collaterals, so numerous on this part, may creep in, and spoil all,—and then there is the risk of the operation into the bargain. The practice of tying the common carotid on such occasions savours more of the dissecting-room than the surgery, and is an erroneous application of the Hunterian operation for the cure of common popliteal aneurism, and which is daily carried into practice, with equal impropriety, in the treatment of wounded arteries, by tying the trunk at a distance from the wounded branch. If a ligature on the carotid, for a pulsating tumour on the head, does not always stop the blood from reaching it, in consequence of the active influence of collateral branches,—so, on the same ground, the wounded branch or branches will continue to bleed frequently, from anastamosis, when the trunk of the vessel is tied, and which will require a ligature on both its wounded extremities to be perfectly safe.

In a similar manner pulsating tumours on the head must be dealt with, if possible, on the spot; at once boldly by excision, or by ligature and subsequent compression, rather than relying solely upon the closed carotid,—

unless in very bad cases, where the ligature of this vessel may be depended upon as a mere auxiliary only, to check the force of the current whilst other means are employed. And could not the finger upon the vessel, on some of these occasions, accomplish this with as much safety and efficacy, for the short time required, as the ligature?

No surgeon's library can be complete without Mr. Hodgson's invaluable work on arteries, where may be found cases like the following, which, indeed, are perpetually occurring, and which shew, that, although the ligature on the trunk may *control* or *diminish* the current of blood through a distant branch, yet, it will not always *stop* the bleeding from it altogether. This requires further aid, in the shape of compression or final ligatures.

CASE.

Wound of the Radial Artery, as it passes under the tendons of the Thumb. From Mr. W. Fletcher's Case Book.

Thomas Tyler, aged twenty-one, a carpenter, wounded the radial artery with a chisel, just as it passed under the tendons of the thumb. He immediately went to a surgeon, who merely brought the edges of the external wound together by sutures. In a week afterwards, the blood gushed from the wound violently, and in jets, when it was controlled by the finger. Another surgeon was sent for, who, examining the nature of the case, placed a ligature upon the radial artery, above the wound, and, in case of bleeding, a tourniquet lightly upon the brachial. In three days afterwards the artery again broke out; the dressings were removed, the blood was cleansed away, and pressure made upon a false aneurismal sac, which was discovered to have formed at the wound in the artery. During this hemorrhage he lost a large quantity of blood, which rendered him extremely weak. In a few days the bleeding recurred. Another ligature was placed upon the artery, above the former, with no effect, the blood issuing from the lower end of the vessel, where no ligature had been placed; when a ligature was passed beneath the artery, lower down than either of the former, by means of a needle.

On Sunday, the sixth of March, he came into the Hospital, blanched, and incapable of standing, and as it was not deemed fit to meddle with it unless bleeding recurred, the act was waited for. On the Thursday following it took place. The dressings were removed, and the wound freely ex-

posed; pulsation was distinctly felt, and indeed to be seen in the wound. Pressure upon the trunk of the radial stopped the pulsation at the wound, and as the wounded point of the vessel was very difficult to reach, a ligature was applied on the trunk of this point; but, on the next morning, (Friday,) bleeding again took place from the wound in the vessel. The ulnar artery was now tied; in a few minutes afterwards pulsation was distinguishable in the sac.

On seeing this sure sign of a fresh bleeding,—though the pulsation was not so strong as before the ligature was applied,—the surgeon put a sponge compress exactly on the wounded vessel, the pressure of which was regulated minutely, by the pad and screw of a tourniquet placed over it, observing, that, as the pulsation was diminished by the ligature, he thought compression would now succeed, which it did perfectly in this example.

Had this wounded radial artery been secured at both its extremities if divided, or on both sides the wound in it, if not divided, there could have been no bleeding, from the anastamoses being entirely excluded, by the closeness of the ligature, to the injury of the vessel.

This case, with many others, serves to confirm what has been said and long since observed, that ligatures upon arterial trunks will frequently do no more than merely restrain the impetus of the blood through their branches. Though sometimes useful, this will often prove too expensive, as well as an unnecessary auxiliary in operation.

The part of the foregoing case of aneurism of the posterior aural artery, which belongs to its history, after the return of the patient to the hospital, is so far distinct from the portion of it before described, as in no way to interfere with the fact, that the disease was cured by the two ligatures. It is probable that the affection of the nerves was local or original, and not sympathetic, which is the general form of tic douloreaux, as exemplified when a symptom and effect of gastric irritation.

The cases narrated by Dr. Warren, in the Boston Medical and Surgical Journal, were very similar to the neuralgic portion of the preceding case. They too were local and original affections, or they could not have been cured by excision.

The difficulty must be in discriminating between really original, and

sympathetic affections of the nerves, which, however, ought to be done before a surgeon would be justified in recommending so severe an operation as the excision of the nerve itself.

The disease of the artery, in the foregoing case of Chambers, was the probable source of the affection of the nerves, for the same train of painful effects about the head was observed in two cases of aneurism by anastamosis, which are described in the Med. and Chir. Trans. one by Mr. Dalrymple, and the other by Mr. Travers.

There was, however, a difference in the result, when the aneurism was destroyed. In the two examples alluded to the pains passed away with the disease, never to return. In the case of Chambers they did return, though entirely suspended for a time by the cross-cut, and destruction of the vascular tumour;—but they were not removed, to return no more, until the skull-scraping process probably carried away the offending branches of nerves.

The suspension of pain by the cross-cut, was characteristic of the nervous disease, and was followed by the same result as a similar operation formerly done on the sub-orbitary nerve, when affected by tic douloreaux, viz. as soon as the divided nerve re-united, its morbid sensibility returned.

Since the foregoing case I have read another in the Med. and Chir. Review, of Mr. Syme's, which exactly resembled it. The treatment was different. Mr. Syme placed a ligature on the cardiac side of the tumour only. The effect was, that the disease returned, from the communication of vessels on the other side of it: which return would probably have been prevented by placing a ligature on that side also close to the tumour, which plan succeeded so well in the case of Chambers. I say probably prevented, because it is possible, though not very likely, that vessels of communication might even then have crept in between the two ligatures, as must have been the case with Mr. R———, described by John Bell, supposing that the surgeon in that case had really tied the diseased portion of artery at each end of the tumour. In Mrs. T———, Mr. Syme's patient, the same noises in the head and the same kind of pains existed as in those of Messrs. Dalrymple and Travers, and in the foregoing case of Hester Chambers,—but which, unlike the last, departed altogether with the destruction of the aneurismal tumour.

NOTE VIII.

On a chronic encysted Tumour found near the Testis, whose external appearance resembles commonly the encysted Hydrocele of the cord; and may be confounded with affections of the Testis itself.

Of the deceitful forms of tumours of the scrotum, and the errors and confusion to which they lead in practice, there can be no doubt; and a candid surgeon of much experience will not deny, that his own practice has, every now and then, furnished an example of the truth of this position.

The present note does not relate to watery collections appearing either above, in front, or on either side of the testis, formed in the tunica vaginalis, testis itself, or in the cells of the cord; these, however interesting, as portions of irregular surgery, are not touched on here, with the exception of two varieties of encysted hydrocele of the cord, at the end of this note.

To the eye, the chronic tumour in question sometimes assumes an exact representation of the encysted hydrocele of the cord, when that affection approaches very low down the scrotum, near to the testis; (see the comparative prints) to the eye also, and when conjoined with the hydrocele of the tunica vaginalis, it has sometimes a strong resemblance to that form of hydrocele of the tunica vaginalis which has an indentation across a portion of its surface, dividing it into two tumours of unequal magnitude, and which may be imitated on a common hydrocele, by drawing a thread across it, and bearing upon its extremities. (See Case II.)

It may here be remarked that the hydrocele of the cord will also have a similar appearance to the foregoing, should there happen to be any water in the tunica vaginalis, which sometimes happens,—but it will be to the eye only.

The chronic encysted tumour, to which I now allude, is very hard and of long standing, has a smooth surface, is devoid of pain, and insensible to the touch, and, from the colour of its contents, it is probable that it is the aged remains of coagula, and therefore, its origin may generally be traced to some injury of the part. Occasionally, however, this tumour will arise spontaneously, or at least, in cases where no injury has been inflicted.

DIAGNOSIS.

This tumour may be distinguished from hydrocele and its varieties, by its want of transparency, its age, the hard incompressibility and weight, and the want of fluctuation; for though there is a fluid, yet it is very thick, the cyst which contains it is also so thick as not to admit of that motion being perceived through it. Its long existence will scarcely permit the patient to remember much of its early history,—unless it arose from a blow.

From hernia it may be distinguished from its never changing its size suddenly, or disappearing, which hernia will generally do at times, and by the peculiar impulse given to hernia in coughing, which act will not at all affect this tumour. Where the position of the testis is much obscured by the growth or situation of the tumour, and its guidance wanting, this tumour may be taken for a scirrhous affection of that organ, especially if the swelling be of a small size. But the hardness of the former is smooth on its surface, of the latter, knobby, and the cord is thickened.

Both affections are slow in their progress, but in scirrhus there is an affection of the health, and lancinating pains shooting along the cord to the back. In the tumour there is no pain, unless the part should have received fresh injury, and then it will be of the character of that pain which precedes suppuration, and which is altogether unlike the pain of scirrhus. That it is sometimes taken for a diseased testis is clear, for it must have been a tumour of this kind that a surgeon mistook for the testis, and removed the latter in mistake; as described by Sir A. Cooper, in his beautiful work on the testis.

If the testis could always be satisfactorily felt, this would be decisive, that at least the affection could not be of that organ. But, when the detection is not effected, the tumour might be confounded with another disease, by a very careless observer of it, viz. the first stage of fungus hæmatodis. This last, like the tumour, has, in this stage, a smooth surface and hardened character; but the former is of some years' existence, and does not change its appearance,—whilst the nature of the fungus is comparatively rapid in its changes: the hardness possessed by it quickly passes into its latter stages, which are marked by softness, (frequently equal to a common hydrocele,) by a discoloured skin, the surface of which will soon be covered by large veins, and by a disturbance of the health, with a sallow, haggard, and peculiar expression of countenance.

If the testis can be discovered at the bottom, or near the encysted tumour, the distinction becomes very easy; not only from the last objection, but from all others to which the testis is liable. For, this organ being discovered at the bottom of the swelling, the only affections with which the chronic tumour could be confounded would be the encysted hydrocele of the cord and hernia, the character of which last has been already described.

The situation of this tumour above the testis, and about the cord, its hard and insensible feel, its age, (with which its hardness will correspond) its origin, (most commonly from an accident,) its obscure fluctuation, should its age be not very great, will serve to identify its nature: though it might, even with this knowledge, be confounded with the hydrocele of the cord, where it is combined with hydrocele of the tunica vaginalis, should the surgeon be rapid or careless in his manipulations. It could hardly be taken for an hæmatocele,—though it takes its rise probably in the same way;—and if by that term is understood a bloody collection in the tunica vaginalis, for the situation of the chronic tumour is somewhere about the cord, either in the front or behind it. Hence in the hæmatocele the testis is not distinct and of its natural size, as it is engaged in the general swelling. In the chronic tumour it lies separate from the swelling, and may commonly be discovered immediately below it. But if, as some authors have described it, a species of hæmatocele may arise in the situation of the cord, from a rupture of the spermatic vein, then it can be supposed that blood so extravasated may, in the course of time, with the gradual thickening

of its coverings, become the kind of tumour already described. This extravasated blood, deposited any-where about the scrotum, may be the origin of similar tumours in any situation about the testis,—which would be detected more or less easily, according to the relative position, and the size and form of the swelling, which it is presumed must long since have become chronic, and marked by the peculiar characters already described.

CASE I.

Chronic Encysted Tumour above the Testis.

Powell Sparrow, aged forty-eight, appeared at the Hospital with a tumour of the scrotum, about the size of a very large orange, and of an irregular shape. It was, however, composed of two tumours, for near the lower extremity there was a slight indentation, marking faintly their separation, like that of the encysted hydrocele of the cord with the testis at the bottom, but not in so distinct or characteristic a manner. The lower projection was certainly much smaller than the upper, it had a transparent look, and was tender to the touch. The upper swelling was comparatively insensible, had an opaque appearance, and felt very hard and resisting. The projection then appeared to be continued to the sides and back of the scrotum, around which could everywhere be felt the same kind of firm, and insensible mass. Of course there was no evidence of the testis being in its usual place; but this organ, I had no doubt, from the tenderness to the touch, was in the projection at the bottom of the tumour. (See Plate.)

Upon enquiry, it appears that he injured this part forty years ago, in jumping on a horse, that he then felt an acute pain shooting upwards into his belly, which lasted for an hour, and that he never experienced any pain since that period. Some swelling followed the accident, which remained stationary until a week or two before he applied for advice, when a further enlargement took place, accompanied by occasional slight throbbing pains, with tenderness to the touch. The man himself was in perfect health.

The hardness of the upper portion of this tumour was the most embarrassing circumstance of its character; it had the impenetrable feeling of a scirrhus, but without its irregularity, or peculiar pains;—its surface was

smooth, and you might pinch it with impunity. There was no transparency or fluctuation in it, which can always be discovered in the encysted hydrocele of the cord.

I had no hesitation in believing the lower division of the tumour to be the testis, and, in accordance with this belief, to plunge, or rather attempt to plunge, a trochar into its superior part, for in reality it could not be done, although the instrument was new, and urged with force;—such was its hardness of forty years' growth! The pupils believed the testis was being bored, but that could not be, as the patient complained of no pain. At last a lancet succeeded in penetrating this cyst, which the trochar could not, the sides of which were enormously thickened, and which contained about three ounces of bloody-coloured substance, of the thickness of jelly. When emptied, this cyst appeared like a coarse leather bag, which might, by squeezing, be corrugated into thick folds over the face of what was either another tumour like itself, or the testis, as it lay immediately behind this first cyst.

In truth this was the case. Another tumour of the same kind occupied the whole of the back of the scrotum. The tumour below was, as supposed, the testis, now distinct enough by the removal of the contents of the tumour from its boundaries.

Two months passed away before the hollow of the cyst filled up, when all that remained were some ragged folds of skin in its place. It was proposed to treat the tumour, in the usual situation of the testis, in the same way, but he was content with the reduction of the front swelling, and the pain, and left the hospital. There could be no doubt that this posterior tumour was a cyst like the anterior one, proved by the same smooth hard feel and insensibility that distinguished it from the testis, which it had pushed downwards, but whose natural position would have been the spot occupied by itself.

Many believed that the small transparent-looking tumour at the bottom of the scrotum was not the testis; and to these, the difficulties in proving the character of the larger and upper tumour would be increased; for, believing this latter to be a diseased testis, and the former a collection of water, the question would come,—what, then, is the condition of

that organ, as seen in the upper tumour? It was uniformly too smooth, and the pain unlike that of scirrhus,—it had not the rapid growth, size, or shape of the hydatid testis,—it did not accord with the local or constitutional character of fungous hæmatodes, or with the hydro-sarcocele, which it was ingeniously supposed to be, with the water at the bottom of the testis instead of the front; but to those who believed the tumour at the bottom to be the testis, the difficulties disappeared, and the diagnosis was simple.

This belief was very fairly founded upon the greater degree of sensibility it possessed over that of the neighbouring parts, and the peculiar kind of it. Assuredly, the testis, in this case, did not assume the distinct form observable in the encysted hydrocele of the cord, nor did the chronic tumour itself resemble that affection,—so that the diagnosis, though not difficult to clear out, by attention and repeated examination, yet was it sufficiently so, at first sight, as to deceive very intelligent observers.

CASE II.

Large chronic encysted Tumour, in front of a large Hydrocele of the Tunica Vaginalis, with an immensely thick tunic.

Mr. P——, of Longhope, consulted me on account of an immense tumour of the left side of the scrotum, for which he had undergone a variety of treatment, under different medical practitioners. It was as big as a human head, globular, and without having anything of the pyramidal shape, the transparency and lightness of an ordinary hydrocele. It rose knobby, though smooth, and bulging towards the abdominal ring, and its inferior portion bore the same projecting character,—but between these two projections there was an indentation passing across the tumour, about its middle. The two masses were nearly of an equal size, and were both hard to the touch, but the inferior was clearly the hardest. This irregularity, or comparative hardness of surface, to a cursory observer might, at first sight, look like the character of fungus hæmatodis; but a more careful manipulation could trace the hardness to extend over the whole surface of the lower mass, whilst in the upper mass a comparative softness pervaded uniformly its entire extent, leaving no alternate points of hard and soft in either tumour, as is seen in fungus hæmatodis. The testis

could not be felt. The tumour approached so near to the ring, that, had not the vessels of the spermatic cord been greatly enlarged, this part could scarcely have been detected emerging from it.

It was much heavier altogether than a hydrocele of that size could be; emitted nowhere any transparency, and was entirely devoid of pain, even when considerably squeezed. There was an obscure fluctuation when struck on its base, and its surface was traversed by numerous large veins, like to those which are found on the surface of large vascular tumours.

The patient was perfectly healthy, and of a robust appearance. He said, that about eight years ago he first distinguished a small swelling on the scrotum, which came without injury, but he does not recollect whether it commenced from the bottom; that, in four years, it grew to a size equal to the present, bore the same form, and possessed the same unyielding firmness:—that about this period, he found one morning, on awaking, that a great change had taken place in it,—that the upper portion had suddenly become soft, and, from a circumscribed swelling, had spread itself about the scrotum, and that there was a very considerable alteration in the colour of the skin.

In time, however, the tumour again became firm, and of its present appearance.

It was explained to the patient that there was probably a fluid in the upper portion of the tumour, and that by drawing this off, the other circumstances of the case, which were unusual, would probably be revealed.

About a pint and a half of coffee-coloured fluid escaped through the canula of a trochar, introduced with considerable difficulty a little above the transverse indentation, leaving the tumour about two-thirds of its original size. A probe was now passed, which encountered a hard resisting substance at the bottom of this large cavity. To prove the nature of this, it was necessary to cut up freely the front of the scrotum, but this was done with unexpected difficulty, for the cellular membrane beneath it had become thickened to the extent of half an inch on all sides, forming the front parietes of this great cyst. From the bottom of this great cavity was turned out half-a-pint full of substance resembling coffee, and now became visible the smooth shining appearance of another tumour, against which the probe had struck.

This was the tunica vaginalis, containing the true hydrocele, but with a singularly hard feel. A lancet was buried in it more than half an inch, before the fluid was reached, which then, with great force, jetted through the thickened membrane in a full stream across the room. A bistoury enlarged the opening in this rough texture with difficulty, and from its upper portion I raised a piece which was full three quarters of an inch thick. Some notion, indeed, may be formed of the change this tunic had undergone, from the fact that four arteries were tied from its cut sides. The testicle was sound. About two pints of water escaped from its tunic. A piece of oiled lint was laid in the large opening made by the removal of the piece already mentioned.

On the third day considerable inflammation supervened; on the fourth the tumour had arrived at half its original size, and he complained of great pain in his back, and fever; but in a few more days these symptoms were reduced in the ordinary way, and on the fourteenth, the tumour having greatly subsided, the state of the part was examined.

The tunica vaginalis was adherent in most points to the testis, but was everywhere still full three quarters of an inch thick. The cyst in front of it had nowhere closed, and from it was pressed a considerable quantity of pus.

On the twenty-fourth day from the operation, the cyst, showing no disposition to close, was injected with a solution of sulphate of zinc. The tunica vaginalis was much thinner. Thirty-seventh day,—the injection had failed to close the cyst, and a large seton was passed through it, but ultimately, great thickening of the scrotum having taken place over the seton, it was withdrawn, and its hollow residence opened with a bistoury. The finger being passed over the surface of the remaining cavity, discovered that the thickening of its side was rapidly passing away; and, in seven weeks from the operation, I took leave of this patient, who remains perfectly well.

The circumstance of this tumour having long existed without pain, and having an indentation across its centre, that it had fluctuation, though obscure, made it look like a hydrocele of some sort; but, then, its great weight, and almost incompressible firmness,—produced by the thickened sides of the cyst and tunic,—but more especially the enormous veins, were

embarrassing; he could not say whether the tumour begun at the bottom of the scrotum. The indentation across its centre proved to be the border or termination of the cyst, where its edges rested upon the true hydrocele with its thickened tunic, as it formed the lower mass of tumour.

From the extraordinary size of the veins, a cursory observer might have confounded this great scrotal tumour with fungous hæmatodes of the testis, if he did not immediately recollect that this circumstance might be accounted for, from the great mass of solid material soliciting an unusual quantity of blood to the part, which, in its return, must necessarily enlarge the veins. There can be no doubt that the appearance is more peculiar to vascular tumours, especially to the fungus hæmatodis, but then an enquiry into the history of this particular tumour would clear away all suspicion. It had not the feel of the fungoid disease of the testis in its early stages, nor its size or shape, nor the occasional lancinating pains, nor the peculiar, sallow, haggard, and horrifying expression of countenance of that fatal affection. The great length of time too which the tumour had existed without change was a proof of its innocence; though Sir A. Cooper says that this malignant fungus will maintain its harmless character for years;—but surely while it does so it cannot properly be called fungus hæmatodis.

Sir A. Cooper states, that such is sometimes the difficulty of distinguishing affections about the testis, that he sees no harm in puncturing doubtful tumours with a lancet, to ascertain their nature. If in some cases the patient sustains no injury from such practice,—its adoption is unquestionably an admission of our ignorance of those minute and delicate features of character which belong to such affections, and by the knowledge of which they can be distinguished from each other. Such knowledge may probably be always acquired by attending closely to their early history, and the subsequent progress, together with careful and repeated manipulations.

Perhaps it is to be regretted that such high authority should have delivered an opinion which may be mischievous; inasmuch as the young surgeon instead of taking the slow and laborious method of deep investigation, might be tempted to thrust his lancet into this important part, in all cases that may appear the least doubtful, and quote the influential name of Sir A. Cooper as his authority.

Should the young surgeon ultimately decide upon this mode of testing the tumour,—to distinguish the fungus from hydrocele,—he must be prepared at the same time for performing the operation of castration, when the bloody sign of malignancy makes its appearance; for the disease will run an exasperated course after the puncture.

The rapid progress of malignancy after the puncture, is so characteristically and forcibly pourtrayed by the surgeon who drew it up, (without, at that day, his knowing much on the subject,) that the following case shall here be inserted, as an useful lesson to the younger members of our profession,—to make out diligently a correct and early diagnosis,—to be prompt with the knife, on the discovery of malignancy.

FUNGUS HÆMATODIS AFTER PUNCTURE.

"A very healthy looking, well formed young man, aged twenty, of a florid complexion, in whose family there was a strong scrophulous disposition prevailing, applied to me on account of an indolent swelling in the scrotum,—with which he had been some time affected,—in the month of December.

"It appeared to be a fluid in the tunica vaginalis. I endeavoured, ineffectually, to produce the absorption of the tumour.

"Jan. 1st. I punctured it, but a little bloody serum was all that was discharged.

"2nd. He had severe pain in the part, accompanied with sickness and quickened pulse. Bled him, and gave him laxatives. The testicle became very painful, and very much swollen,—it was enveloped in a poultice.

"4th. Six leeches were applied to the scrotum. In the course of a few days the pain subsided, and a fungus began to pullulate from the puncture, with an offensive gleet.

"By the first of February the fungus had grown to a large size, it was very soft and spongy, the integuments of a considerable part of the scrotum and covering a portion of the corpora spongiosa penis were discoloured,

thickened, and diseased. The ulceration of the scrotum, which began from the puncture, was very considerably enlarged, probably of the size of a crown piece, and out of this the fungus pullulated like a cauliflower, and overspread a great portion of the scrotum.

"20th. The fungus was grown so large, and its discharge was so very offensive, that he consented to my proposal made some time since, to remove the disease as far as it extended. The whole of the scrotum on the diseased side, with part of the integuments of the penis, were removed. The testis and tunica albuginea were sound and not excised. The integuments were brought together after the operation, by sutures and sticking plaister, and in great part united by the first intention; but when the same was nearly healed, another fungus began to sprout, and continued enlarging until it had attained nearly the size of a new-born infant's head, and had the same kind of discharge as before. The loathsomeness of it, and the rapid decay of his strength, and flesh, made him submit to a second operation, when I took away the testicle, though it appeared sound, removed the spermatic cord as high as the ring, and also all the integuments and cellular substance, to the division in the tendon of the external oblique. This was done June 14th, and by the 26th of August the sore was perfectly cicatrized. Nevertheless, on the 8th of October my attendence was required again,—another tumour, about the size of a filbert, appearing about the middle of the cicatrix, which was rather towards the bottom of the scrotum: I removed this on the 10th. When the wound occasioned by this operation was nearly healed, a fresh fungus sprouted out. This again increased rapidly. He could not be prevailed upon again to submit to the knife, but was persuaded to go to Bath, and place himself under an empiric, who promised him a cure by caustic. He suffered a great deal under his hands, the fungus as I heard repullulating as fast as it was destroyed.

"Sunk miserably in three or four months."

Had the operation of castration been done at the time of the puncture, presuming the enguinal glands to be free, it is probable that the patient's life would have been preserved.

The following cases, though not examples of the chronic encysted tumour, may, as anomalies of the encysted hydrocele of the cord, be worth noticing.

CASE III.

Encysted Hydrocele of the Spermatic Cord, resembling externally that of Hydrocele of the Tunica Vaginalis, with the indentation across its centre, and combined with the last mentioned affection; with the additional circumstance of the Testis being adherent to the front of the Tunica Vaginalis.

One of Colonel Berkeley's gamekeepers appeared at the Hospital with a large tumour of the scrotum, on the right side, which at first sight, from there being a distinct indentation across its middle, was taken for a hydrocele of the tunica vaginalis, when it assumes that variety of its external character. A closer inspection, however, explained the difference between the two affections. This tumour had its lower division, or inferior mass, larger than the upper, and there was a greater weight and irregularity of shape altogether than belongs to the hydrocele of the tunica vaginalis. In truth, the lower mass, or that beneath the indentation, projected considerably beyond the upper. A still closer examination shewed that these two masses were not contained in the same cyst. The face of the interior tumour looked thinner and more transparent than the upper, and it was really softer.

The superior mass, or that above the indentation, was comparatively firmer and more solid to the touch, although evidently containing a fluid. The density, therefore, was the effect of its comparatively thickened parietes.

But a chief distinguishing character was the circumstance that the lower mass, when pinched, gave that tenderness or peculiar pain which the testis only can yield when squeezed, and which unquestionable position of it would have induced a belief, that the tumour was nothing more than the encysted hydrocele of the cord, with the testis below it. But then this body was not distinct, small, and pendulous by itself, but evidently lodged, not in the centre of a mass of swelling, but superficially in the middle of its front face. Believing that the two swellings were of different characters,

and that the indentation over the centre of the general tumour, was nothing more than the natural boundary which marked their separate extent, I did not hesitate to make an opening into the superior or firm one, which appeared to be an encysted hydrocele of the cord, from which escaped a considerable quantity of bloody-looking serum. The inferior swelling remained but little affected by the reduction of the superior; and an examination with the finger, through the opening made by the knife, clearly ascertained that no testis was contained in its thick cavity, but that it was below in the tunica vaginalis, and, from its superficial and prominent situation, undoubtedly adherent to the front of it.

By holding the apex or upper portion of this remaining swelling in one hand, and striking its base with the other, a fluctuation was very perceptible.

The cavity of the encysted hydrocele was washed out with port wine, and a piece of lint, slightly moistened with the same, was thrust into it.

The object of this proceeding was a double one,—to inflame the cyst, that it might be closed by the adhesive process, and to ascertain how far the severe inflammation I expected, would induce absorption of the fluid in the neighbouring tunica vaginalis.

Great inflammation did come on, and an abscess was the result, with considerable fever; but the whole affection,—the encysted hydrocele, and that of the tunica vaginalis,—was cured by it.

This case may serve to shew the necessity of repeated and careful manipulations, where there are double-looking tumours of the scrotum, and especially with a greater weight than is common to hydrocele.

CASE IV.

Encysted Hydrocele of the cord, which would pass through the abdominal ring, and hence was mistaken for a rupture.

A lad, about fifteen years of age, was brought to the hospital by a truss-maker, with a tumour of the scrotum. An apothecary had seen him,

who, taking the complaint for a rupture, had ordered, and he had worn, a truss. But it appeared that his friends were dissatisfied with the inefficiency of the instrument, and wished to have the opinion of a hospital surgeon.

An oblong tumour, between three and four inches in length, occupied the right side of the scrotum, but it did not reach to the bottom of it. It was more tense, and appeared larger, when the patient was erect,—was easily diminished by pressure towards the ring,—would finally pass through it, and appear reduced like a common scrotal hernia. But a close observation detected it to have lodged above the ring, in the direction of the spermatic cord, where it formed a distinct swelling. No pressure there would carry it further into the abdomen; but, upon withdrawing all pressure in that direction, the tumour reappeared in the scrotum.

The testis and spermatic cord could be distinguished at the lower part of the scrotum to be independent of the tumour, to which the act of coughing did not communicate any impulse. It was transparent when a candle was employed. There was a feeling of fluctuation, as though a fluid was contained in a very thick cyst, which appeared not to be quite full. This cyst was plainly traceable from the scrotum to the ring, its parietes feeling and slipping under the finger and thumb like an intestine. Perhaps the pressure of the truss, by inducing some absorption of the fluid within this cyst, and extending and spreading out its own parietes, gave both this character of looseness in its texture, and of its being partially filled.

The facility with which the spermatic cord could be felt after the tumour had descended from the ring, and no impulse being given to the swelling by coughing, sufficiently distinguished it from hernia, whilst the distinct independent position of the testis, (somewhat behind the swelling,) and the obscure fluctuation, with the other characters already described, clearly marked this tumour to be an encysted tumour, or hydrocele of the cord. On the cyst being opened with a lancet, it was found to be at least a quarter of an inch thick, and containing about two ounces of bloody-coloured fluid. The wound was enlarged by a bistoury to the extent of two inches, and a portion of the cyst cut away; in the act of doing which, it was found firmly adherent to the spermatic cord throughout the whole length. Considerable suppuration followed, with a degree of inflammation

of the testis; but in seven weeks the patient was discharged cured, with some thickening of the spermatic cord remaining.

In recording a case of this kind, Dupuytren relates two examples of hydrocele of the tunica vaginalis, which were operated upon in a Parisian hospital, and, in consequence of the communication with the abdomen being open, the stimulating injection passed into the peritoneum. One of these patients died of peritonitis:—the other escaped.

The relation of such a fact as the foregoing must lead to a belief, that where any doubt exists, in a case of supposed hydrocele of the spermatic cord, as to its real nature, that carefully opening the tumour by incision, in the horizontal manner practised in strangulated hernia, would be the safest mode of cure. Its true nature would thus be revealed, and an opportunity afforded, on the escape of the fluid, to ascertain with the finger whether any outlet existed at any point of the cyst. Inflammation enough to close this cyst might then be excited by the insertion of a foreign body.

NOTE IX.

Inflammation of the Testis,—often inducing Effusion, Abscess and Fungus, or, short of these, leaving the organ of great size, and indolent hardness.

Such is the description in my note book, given to the series of effects induced by inflammation of the testis, and which has been since so ably described and illustrated by Sir A. Cooper, under the appellation of chronic inflammation of the testis.

This description is complete, and the term "chronic inflammation" may be correct, though, from having seen the disease originate frequently from accidents which induced acute inflammation in the first instance, (though not being strongly marked) I have always considered the affection as simple ordinary inflammation of the testis, modified by peculiarity of constitution, and ultimately producing the effects described at the head of this note. If the inflammatory action be a little higher than is usually observed in the slower progress of this affection, effusion or abscess is the effect. Should it be of a more feeble and languid nature, the testis is left of a great size and hardness, and the constitutional powers of the patient are unequal to the task of dissipating the mass of additional matter, left by the imperfect inflammatory process which preceded and caused it:—and it is in this state of indolence and insensibility of the part that art also fails very frequently to be of much service. It succeeds sometimes in reducing the size of the testis, and the patient goes away satisfied;—he returns with it, increased again perhaps, to be relieved; and in this manner the case proceeds, sometimes better, and then worse, until he gradually and ultimately

has gathered up an impression in his mind that the disease must be incurable, and then he applies to a surgeon, for the purpose of castration.

It is in this state of indolence and hardness, with some effusion of water into the tunica vaginalis, that I have seen the supervention of artificial acute inflammation and suppuration cure this most obstinate swelling.

CASE I.

Infirmary, Gloucester. James Hyatt was admitted into this hospital, covered with ring-worms, and with a chronic inflammation of the left testis, of considerable size,—marked by a convex or rounded form, remarkably smooth or polished on the surface.

The ring-worms soon disappeared under the usual treatment of causticication, and the blue pill as an alterative; but the enlargement and inflammation of the testis, indicated by some pain, increased during this treatment. It was subsequently reduced by leeching, but the organ itself was left hard, and, though free from tenderness, much enlarged. He had experienced considerable pain in his loins, which were not so much relieved by leeching the testis as by blisters on the back itself.

The effect of the inflammatory action was the effusion of water in front of the testis, which was discharged by a puncture, but its enlargement remained stationary. Various attempts were now made to reduce the great size and hardness of the testis, but without any success.

The patient confessed that he had a gonorrhæa some time before his admission. From this circumstance an urethral origin was suspected, and, in consequence, a sound was directed to be passed twice a week,—the patient at the same time to keep his bed, and undergo a slight mercurial course.

No benefit resulted from these means, which were fairly tried for two months; and as the man's health was very indifferent, he was sent into the country with the testis as large as ever, yielding a little pain upon pressure, but scarcely any at other times. In six weeks he returned to the hospital, the health improved, but the testis of the same size as when he quitted it,—in its front, another and larger effusion had taken place.

Conceiving this indolent enlargement to be a nidus for future mischief, and the loss of the part,—and that it had been alike proof to anti-inflammatory means, mercury, and the treatment of the urethra;—a directly opposite plan was ordered, or that of active stimulation. A slough was made with the potassa fusa through the skin of the scrotum and tunica vaginalis, of about the size of half-a-crown.

On the separation of this slough, some two or three ounces of fluid escaped from the tunic; inflammation followed, and considerable discharge, with general swelling, redness, and heat of the scrotum, and shooting pains along the cord.

These symptoms subsided under the ordinary means, and the front of the eschar was converted into an issue. In one month after the issue became active from the application of the caustic, the patient was discharged cured—an effect probably brought about by throwing the indolent and enlarged part into a state of active inflammation, and suppuration from the neighbourhood of its surface.

CASE II.

"Infirmary, December 20th. Edward Parry, aged forty, has both testes enlarged to a very great extent, and possessing all the characters of the simple chronic inflammation of this part. They are without preternatural heat, smooth and regular on their surface, bulge roundly down their front, have now and then a dull pain, and sometimes a little shooting along the cord, which spreads itself over the lower part of the abdomen and loins.

He has never had a gonorrhæa, nor was this part ever injured by a blow.

The passing of a sound neither indicates a stricture, nor much tenderness at any point of the urethra;—nevertheless, as he says that twelve months ago a bougie passed regularly relieved him, the sound is directed to be passed twice a week. He is to be freely leeched, lie in bed, and undergo a slight mercurial course.

Jan. 29th. This man is no better. That is to say, the testicles are as large as ever, though without pain. On the lower part of the front of the

left, there is evidently a fluctuation, but it is not tender to the touch. It is probable this affection of the testis is a sympathetic one, derived from an injury done to the loins.

In the summer of —, in wheeling a barrow, heavily loaded, down some steps, the machine was likely to get from his hands, and in a violent attempt to stop its rapid progress, he felt "a snap" close to his spine, just above the ilium;—it was so acute as nearly to induce fainting—followed the course of the spine of the ilium, and terminated in front of the abdomen. Some discharge of blood ensued, as he said, through the anus. It was about six months after the foregoing accident, that he distinguished his left testis to be much enlarged. It was not then painful, but became so in about five weeks after he first noticed the enlargement. The right gland then became affected, and painful in the same way. He received relief by the use of the bougie, and rest, as already mentioned.

Two blisters are to be applied over the part of the back where the injury was received, and another upon the right testis.

Feb. 11th. He has had more blisters, and there is an evident reduction of the right testis."

The man got tired, and left the Hospital. He became, however, as bad as ever, and was again under my care. The testes were both large, and he wanted them removed.

In the left there was apparently a hydrocele, in addition to the enlargement, as in Hyatt's case already described. He was treated in the same way.

A slough was made with the potassa fusa of the size of half-a-crown, which was followed by an escape of fluid, inflammation, fever and profuse suppuration. It, however, reduced not only the left gland to nearly its natural size, but the right was also diminished.

The hole made by the slough, when the inflammation subsided, was filled with peas, and after a time the patient went home well satisfied *with* both his testicles, which he intended to leave behind him.

Circumstances of course must be weighed by the surgeon, before he would copy so bold, and perhaps it may be thought, so rash a practice as

the foregoing. At all events, he would carefully make out, before he treats his patient so roughly, whether it is really this innocent enlargement of the testis with which he is about to deal.

The affection commonly begins in the epididymis, and creeps slowly over the testis itself, which it enlarges and hardens, leaving it of its natural shape, excepting only that the convexity of the gland is increased.

Sir A. Cooper says this progress is made without pain. I have certainly seen it accompanied with pain, when preceded and caused by the infliction of violence.

It may be confounded with fungous hæmatodes of the the testis. "But the excessive hardness in the first stage," says Sir A. C., "and the yielding and obscure fluctuation of fungus in the second, distinguish it from chronic enlargement of the testis." To which may be added, that in the last affection the patient is in good health; nothing of the frightful expression of countenance of the fungus can be distinguished, nor can there be seen the dilated veins of the latter spread over the surface of the tumour.

It will be recollected that the caustic opening into the tunica vaginalis was made in the fungous cases, where there existed the intervention of water between the power of the application and the body of the testis. I have, however, used the same caustic, rubbed freely upon the fungous growth of the testis itself, which sometimes succeeds its suppuration in these sluggish inflammations of it, without any mischievous consequences; and hereafter I should not scruple to employ it, to produce the inflammatory process in these simple and innocent enlargements, in cases proper for a trial of such treatment.

CASE III.

——— Reynolds, aged twenty-five years, received the kick of a horse on his right testis, which was followed by swelling and pain in the organ, and which were reduced by the usual means.

Some months afterwards it enlarged again, without any additional exciting cause being known to the patient;—burst, and threw out a fungus; and he appeared at the house with an insensible, firm fungus, growing out of, or attached to the testicle, somewhat like the head of a closed cauli-

flower, and assuming, by its projection from the face of the testis, somewhat of an oblong shape. Before the scrotum gave way, the pain was very great, but afterwards, when the fungus was protruded, the patient became quite easy, and has remained so ever since, the health good, and the part of little inconvenience to him.

He was sent to me by a medical friend for castration, the affection being mistaken for a cancer.

The only fungous affections which *can* be confounded with it, are, the scirrhous testis, become ulcerated and fungated, and the fungous hæmatodes;—but the want of all the characteristic symptoms of the two latter important diseases, would clear any doubt that might momentarily arise from a mere glance of the external appearance of the innocent fungus.

The tumour in this case, of the size of a burgundy pear, was pared away without giving any pain, but not sufficiently to make the surface left on a level with the scrotum.

To accomplish this, the part was rubbed with pure potash. Some pains after this were felt in the testis, along the cord into the belly, which soon disappeared under the use of a cold wet rag. But the fungus not being entirely destroyed in this manner by the pupil, it was again pared off to the plane of its edge,—and now the caustic was used effectually. Discharged cured.

DEFORMITY FROM A BURN.

CASE.

On the Cure of that kind of Deformity from a Burn, where the Chin is bound to the Breast.

A very high authority having said that he never saw a case like the foregoing capable of being cured, the accompanying comparative print of

Anne Jones is given, in addition to some others now on record, at the time of the operation, and subsequent to its performance.

The operation consisted in a free removal of the old cicatrix, laying the redundant flaps transversely across the throat, and raising the chin considerably above the horizontal line. Straps secured the flaps of skin, and an unyielding mattrass, with a well padded collar, sustained the chin most correctly. Great and unwearied attention,—from an intelligent pupil,—accomplished the cure, as it is now seen, which is a period of five years from the date of the operation.

It is, probably, the want of the necessary minute and constant attention to keep the chin well *above* the horizontal line, for the whole period of healing, which has caused the failures in this operation.

No collar was worn in this case, nor has any contraction taken place subsequent to the healing of the sore.

The chin is as far from the spot of its former union with the breast, as it was immediately after the closure of the wound; the chin, however, cannot be raised above its position marked in the print, on account of a perpendicular line of skin which interrupts the motion of that part upwards.

NOTE X.

Imperforate Vagina; the whole passage closed up to the Uterus.

The vagina may be impervious, from obstructions at its external orifice, as by adhesions of the labia pudendi, or of the nymphæ, or in some points only, by a contraction of the canal higher up, even close to the neck of the uterus; or it may be coherent its whole length at all points, which of course is the worst, and, I believe, a very rare form of this affection. The following case is an example of the last.

It must be rare, since one of our most experienced, and the very boldest of our obstetrical surgeons, never met with an example; and who, moreover, has declared, that it is a case which would scarcely admit of a remedy, were it to occur. In this belief he was wrong, as will now appear.

CASE.

P.—— B.——, of ——, in this county, brought a letter of introduction from a medical friend at ———, requesting my opinion of her case.

The patient was a stout, well-formed young woman, twenty-two years of age, with a countenance of indifferent health, expressive of a peculiar shyness, and great distress of mind. She was subject to occasional palpitations, to flatulence, and oppression after eating; was easily tired by exertion, and had never menstruated. On making this last enquiry, I observed an old woman, who accompanied her, making sundry significant nods, and looking, or rather winking, "unutterable things;" remarking at the same time, that the patient did not so much regard her inward com-

plaints as one of another description, which was bitterly complained of at home, and which made her life miserable in the neighbourhood. "In troth, your honour," said the eloquent old lady, in a subdued tone, approaching close to my person, laying her finger impressively on my arm, and at the same time, with great feeling, turning her back upon the patient, "in troth, your honour, this poor thing is married, but she has got no ——."

Externally the parts had a well-formed and natural appearance;—though an urinous odour was very distinguishable. On separating the labia pudendi, and surveying carefully all within them, the orifice of the vagina appeared unusually high up; that is, much nearer the glans clitoridis than it should be. On a more minute inspection, the real condition of the parts was as follows.

The fossa magna was entirely walled up, from the inferior commissure to the opening which, at first view, appeared to be the orifice of the vagina, but which, in reality, was the orifice of the urethra, very flabby, and enormously enlarged, and which was then in the act of bedewing with urine the parts below. The wall of substance thus filling up the fossa magna was solid and unyielding, giving no idea of there being a hollow behind it, occupied by a moveable substance, as in the more common closures of the orifice when the catamenia are collected in the passage,—nor was there any fullness of the lower part of the belly, or pressure upon the bladder or rectum, from collected blood, which interfered with the functions of these parts. Nowhere could the probe detect any opening, by which, as in the coherent nymphæ of children, a passage from the neighbourhood of the orifice of the urethra could be traced behind the cohesion to the canal. But into this said orifice of the urethra, first the probe, then one and two fingers passed into the bladder with the greatest facility, the woman evincing no pain or surprise at the rough liberties thus taken with her bladder.

The very extraordinary size of the urinary orifice and canal, is best explained by a hint at its equally extraordinary cause,—by shortly reminding the intelligent reader that this young woman was a married person.

On enquiry, it appeared that she never had been subject to any attack of an inflammatory nature about the genitals, which were, saving the ure-

thra, in the same state as at birth. Her pelvis and mammæ had expanded fully, and the sexual feeling was not wanting.

From the latter circumstances, therefore, it was probable that the internal organs of generation were in existence, although not the least proof, or even probability existed now, nor could be ascertained to have existed, that the catamenia had ever collected, or had even been formed. The absence of all swelling about the lower part of the belly, already noticed,—the condition of the fossa magna,—the freedom of the functions of the bladder and rectum,—appeared to warrant a belief that no menstrual flux had ever been secreted; and it was, therefore, probable that the whole passage was obliterated, into which this fluid must have been poured, if one had existed.

Under these circumstances, the case presented but a gloomy prospect of success from an operation, and the idea of one was rather discouraged in the mind of the unfortunate patient, who, however, being resolutely disposed to the measure, I consented to endeavour to make a road to the uterus.

The patient was placed and tied in the lithotomy position.

The fore-finger of the left hand was introduced into the rectum, for examination of that part, but discovering nothing unusual, it remained there as a guide to the after steps of the operation. Choosing a point in the centre of the solid substance which occupied the position of the fossa magna, exactly midway between the centre of the enlarged mouth of the urethra, and the inferior commissure, and at an equal distance from the nymphæ, the point of a double edged-scalpel was introduced to the depth of an inch, and the opening enlarged at the same moment, upwards and downwards, so as to make room for the finger. Nothing followed the puncture besides a few drops of fresh blood; the resistance was equally great to the point of the knife, the whole extent of its action. The fore-finger of the operating hand now occupied the hole made by the knife. All was shut and closed around its point; and yet there was a certain feel—of a reticular kind of texture, though much too firm to tear asunder, that gave some hope; the knife was resumed, and the fore-finger recalled from the rectum to assist in the dissection. This was carried on to the depth of two inches, keeping the point of the knife in the centre of the supposed passage, between its upper and inferior floors, sometimes pushing the parts out of

the way of the knife, as the latter made its slow progress. I felt, however, that I was engaged in very blind work,—if Scylla was avoided, there was imminent danger of falling upon Charybdis; if the knife kept clear of the poor woman's bladder, it was in danger of penetrating her rectum; and wishing to avoid this mischief altogether, I bethought myself of a large rectum bougie, to be driven with a mallet. The room already made by the knife admitted a large gum elastic instrument to be urged forwards to the extent of about two inches and a half. Fairly lodged in the hollow, the heel of the bougie received several severe taps with a hammer, that made the patient start again and again, but by which ground was evidently gained. The operation succeeded well. In about a week, repetitions of this practice of tapping succeeded in reaching and discovering the uterus, which was perfectly formed, and in a healthy condition. The woman returned home,—soon after menstruated,—and has since been rewarded, for some severity of suffering, with a more peaceful home, and also, as I understand, with the birth of two children.

Among some of the peculiarities of the foregoing case are, the great length of time the consolidation had existed before its removal,—its strength and extent,—and the long period which elapsed between the usual date of the first secretion of the menstrual fluid and the time of the operation, without any secretion having been effected. In ordinary cases this fluid is collected and retained above the obstruction, and its existence is announced by the various inconveniences it creates. Here was no collection, and therefore, no inconvenience. It is true the health was bad, and that it was restored by the operation; probably allowing of the action of the natural means for exciting the long lost functions of the uterus, and an exit for its secretions.

The novelty of the method of operating, and the curious route of the penis, are, perhaps, worthy of remark. The enormous dilatation of the urethra, (the effect of its strange direction,) and the incontinence of urine it produced, soon diminished,—and twelve months afterwards, no vestiges remained of their existence.

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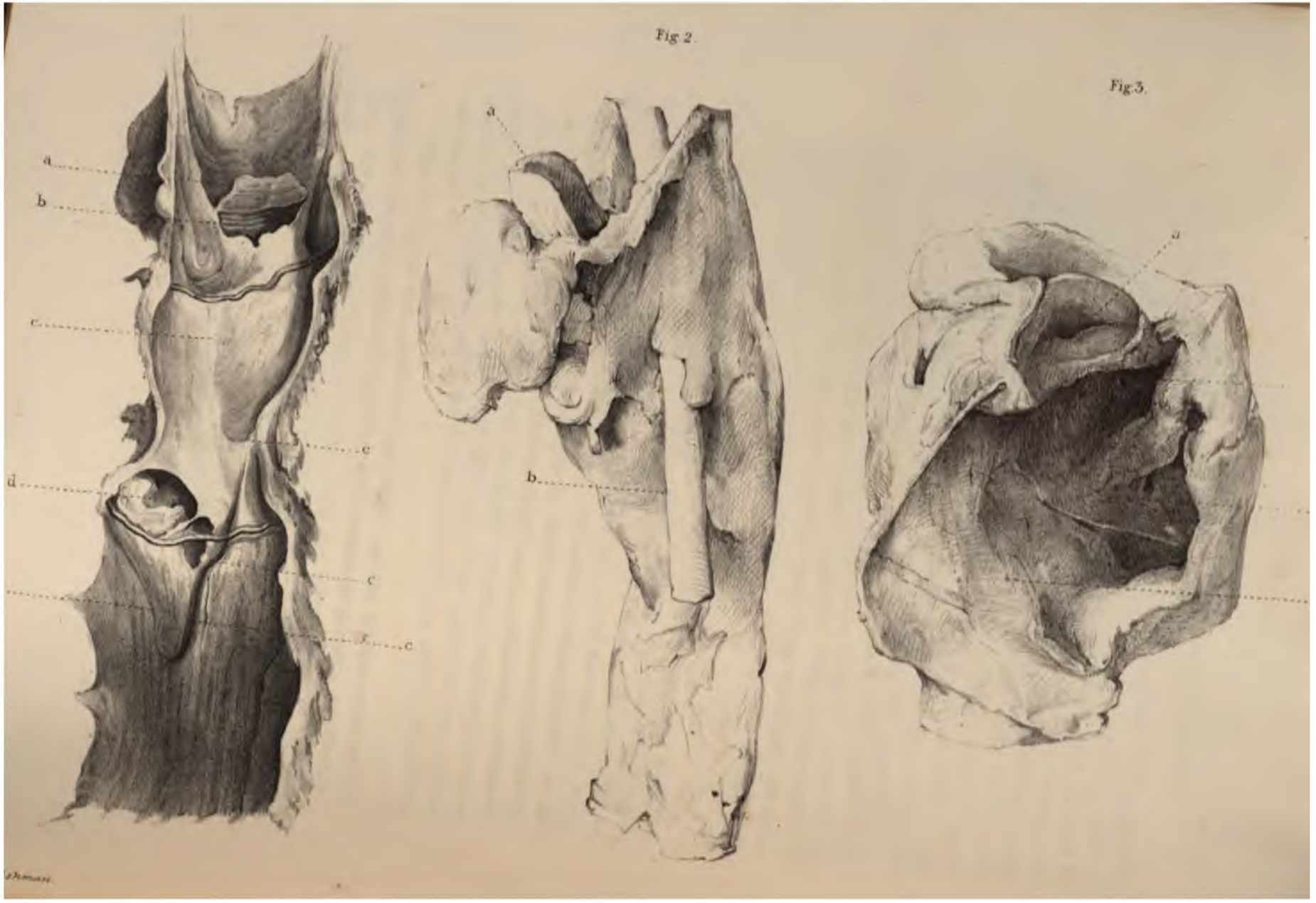
Fig 2.
Fig 3.
a
b
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b
a

PLATE I.

Views of False Passages made by Bougies from the Œsophagus.

FIG. 1. View of the inner surface of the œsophagus, with the folds of its lining membrane passing diagonally across the tube, constituting the membranous stricture.

a. Epiglottis.

b. Glottis.

ccccc. Irregular projections of the inner membrane, forming the stricture.

d. Opening made by the bougie into the trachea, in an attempt to pass the obstruction with its point.

FIG. 2. External view of the larynx, and lower portion of the pharynx, shewing a perforation made through the latter by a bougie in an attempt to pass a stricture opposite the cricoid cartilage.

a. Epiglottis.

b. Bougie through the opening.

FIG. 3. View of the remains or cyst of a chronic abscess of the lower portion of the pharynx, which pressed upon, and nearly closed the larynx; and which ultimately destroyed the patient by sudden suffocation.

a. Glottis nearly closed.

bbb. Cavity of the abscess.

Fig. 1

Fig. 2.

Fig. 3.

Fig. 4.

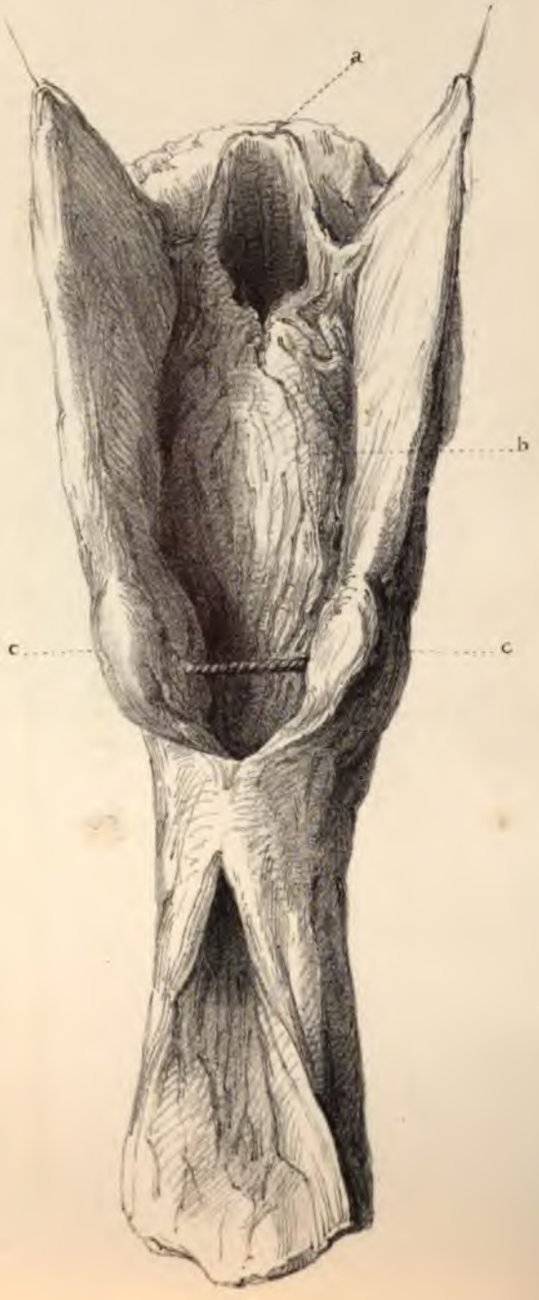

PLATE II.

Exhibits views of the membranous and cartilaginous strictures of the Œsophagus, with the instrument designed by the Author, to dilate or lacerate them.

FIG. 1. Membranous stricture of the œsophagus.

a. Inner lining of the œsophagus, puckered or corrugated.

b. In a greater degree here, so as to nearly close the channel of the œsophagus, through which a small bougie only would pass, as seen in

FIG. 2. The closed dilator passed through the stricture.

FIG. 3. The extremity of the dilator opened, to shew its structure, and mode of operation.

FIG. 4. A fine specimen of the cartilaginous, or what might be called scirrhous stricture of the œsophagus.

a. Epiglottis.

b. Inner surface of the œsophagus, shewing its coats greatly thickened.

cc. The cartilaginous or scirrhous thickening of, and between the coats of, the œsophagus, forming a kind of tumour, which closed up the canal of the gullet so as to admit only an ordinary sized urethra bougie down this tube.

Fig.1.

R.F.Junior.

Fig.2.

R.F.Junior.

Fig.3.

B.Benne

Fig.4.

R.F.Junior.

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PLATE III.

FIG. 1. ANNE JONES. Deformity from a burn, connecting the chin to the breast;—before the operation for its removal.

FIG. 2. The same Case after the operation, which remains as well at this period,—five years after it.

FIG. 3. The chronic tumour on the cheek, from the irritation of a carious fang.

FIG. 4. An incipient prolapsus ani, with the loose skin surrounding the gut, which skin is the seat of the External Operation for the cure of the falling of the bowel.

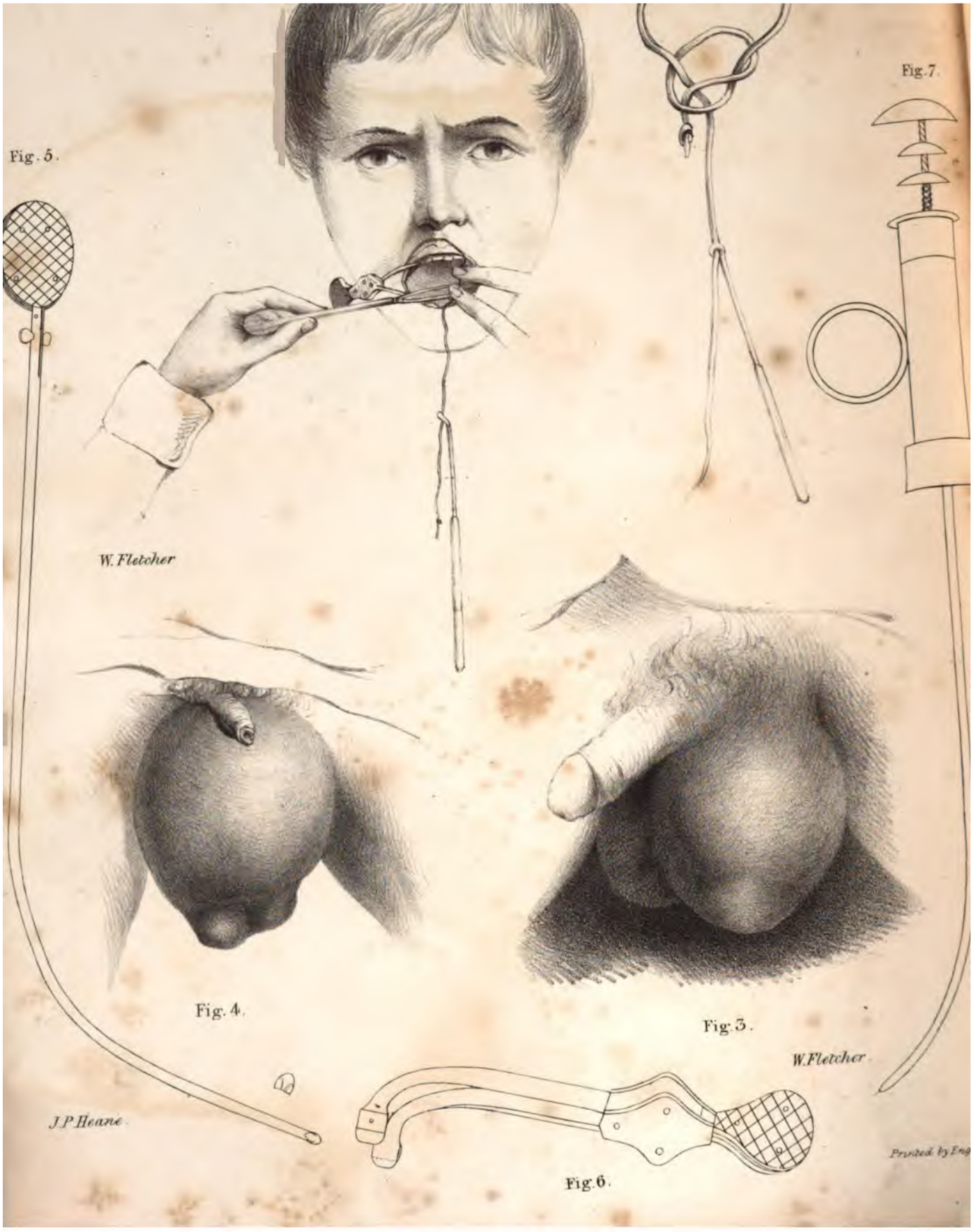
Fig. 5.
Fig. 7.
W. Fletcher
Fig. 4.
Fig. 3.
W. Fletcher
J. P. Heane
Fig. 6.

PLATE IV.

FIG. 1. Mode of noosing the enlarged tonsil, by elongation of its neck, and slipping over it the weaver's knot.

FIG. 2. Weaver's knot.

FIG. 3. The chronic tumour found near the testis, very like Figure 4, by the side of it, in its external appearance,—but distinguishable from it by its extraordinary hardness, weight, want of transparency, slight, if any, fluctuation, and great age.

FIG. 4. The encysted hydrocele of the spermatic cord, in a boy, whose similitude, externally, to the former affection is very striking.

FIG. 5. The dilator for the œsophagus.

FIG. 6. The dilator for the mouth.

FIG. 7. The curved pharyngotomus for the depth of the pharynx.